Vol 6 No 12

December $3.50*

The Australian COMMODORE and AMIGA REVIEW

The full gen on GENLOCK

a business like computer
business

Harry Waterworth
David Williams
Graham Winterflood

Perfect Sound	Digitising sound is easy		24
Power C	Tired of Basic? Try Power C on the C64/128		42
Programming			
Using Sprites	Get into graphics by programming sprites	*C64*	28
Amiga Basic	Trials and tribulations of an Amiga Basic novice		32
Z-80	Z-80 machine language on the 128		38
Assembly Language	Tutorial - Part 2	*AMIGA*	50
CLI for beginners	Examples, hints and tips	*AMIGA*	54
Entertainment			
That's Entertainment	News, Letters to the Editor, Hints and Tips, High Scores	*AMIGA and C64*	63
Game Reviews	Shinobi, Shadow of the Beast, Rainbow Warrior, Public Domain games, The Champ, The Story So Far, Licence to Kill, Jaws	*AMIGA and C64*	68
Adventurer's Realm	Help for problems, hints and tips, Best Games of 1989	*AMIGA and C64*	78
Advertisers Index			80

Amiga Annual 1990
ON SALE NOW

Commodore Annual 1990
ON SALE SOON

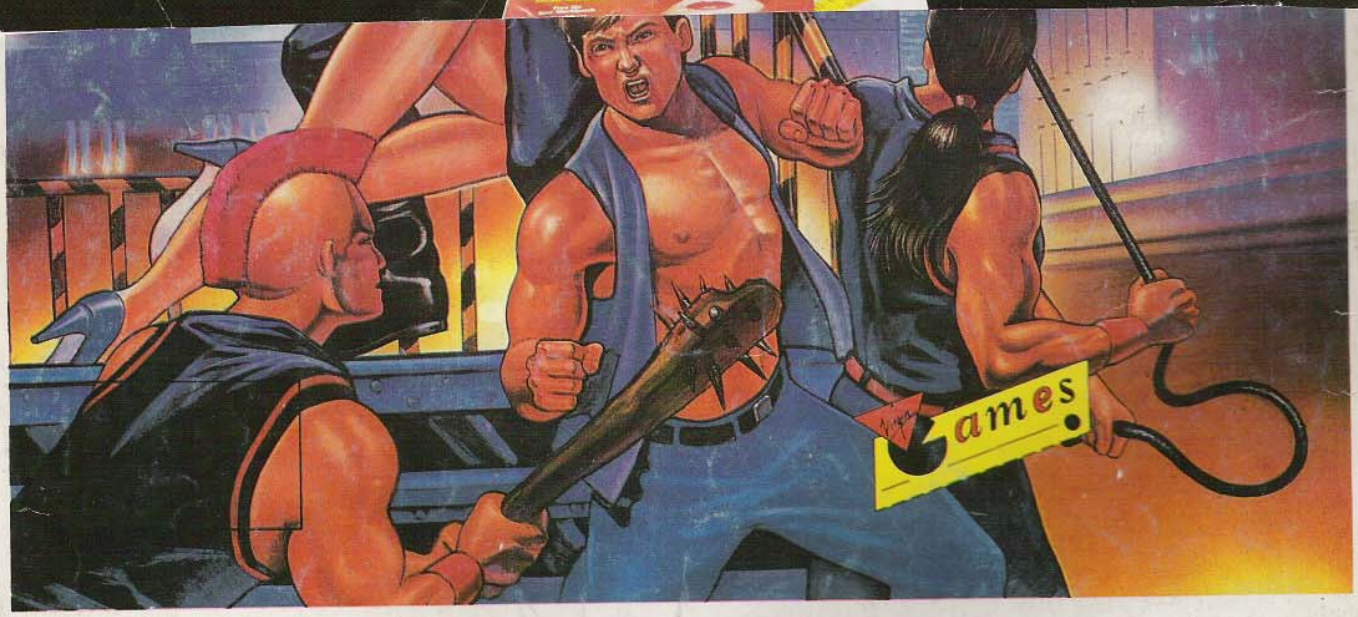
$6.95 each

From your newsagent or computer store

IDEAL XMAS GIFT

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



Distributed by
Mindscape International
5-6 Gladstone Rd
Castle Hill, NSW 2154
Phone: (02) 899 2277
Fax (02) 899 2348

MINDSCAPE
INTERNATIONAL

Available on Amiga
Atari ST
C64 disk and cassette
IBM

The Australian COMMODORE and Amiga Review

VOL. 6 NO. 12 December 1989

Contributors
Mario Annetta
Andrew Baines
Jon Benjamin
Phil Campbell
Oben Candemir
Nathan Cochrane
Damien Disney
Peter Gallen
Anthony Gillan
Michael Hassett
Eric Holroyd
Stuart Kennedy
David Legard
Rod McCallum
Dennis Nicholson
Marco Ostini
Frank Patterson
Ian Preston
Adam Rigby
Adrian Sheedy
Richard Silsby
Lindsay Swadling
Tony Smith
Trevor Smith
Michael Spiteri
Tim Strachan
David Thompson
Nick Van Heeswyk
Harry Waterworth
David Williams
Graham Winterflood

Amiga Annual 1990
ON SALE NOW

Commodore Annual 1990
ON SALE SOON

$6.95 each

From your newsagent or computer store

IDEAL XMAS GIFT

CONTENTS

Editorial	Pirated software	2
C-64ers	Basic 8, Fontmaster 128, Britannica software *C64*	4
News	Spot the Commodore machine	5
Notepad	Amiga training, ProWrite 4.1, Day by Day, DG Calc, Kickstart incompatibility, Animagic *AMIGA*	6
Letters	Faster Amiga, 1541 easy fix, WOK, 1250 printer, C64 drive wreckers	8
Features		
The Write Stuff	Updated, lots more features, now for C128 too *C64/128*	10
City Desk Revisited	Version II at last - worth waiting for?	14
Genlocks	A comparison of available genlock models and their performance *AMIGA*	16
Reviews		
Warpspeed	Speed up cartridge for C64 and 128	22
Perfect Sound	Digitising sound is easy	24
Power C	Tired of Basic? Try Power C on the C64/128	42
Programming		
Using Sprites	Get into graphics by programming sprites *C64*	28
Amiga Basic	Trials and tribulations of an Amiga Basic novice	32
Z-80	Z-80 machine language on the 128	38
Assembly Language	Tutorial - Part 2 *AMIGA*	50
CLI for beginners	Examples, hints and tips *AMIGA*	54
Entertainment		
That's Entertainment	News, Letters to the Editor, Hints and Tips, High Scores *AMIGA and C64*	63
Game Reviews	Shinobi, Shadow of the Beast, Rainbow Warrior, Public Domain games, The Champ, The Story So Far, Licence to Kill, Jaws *AMIGA and C64*	68
Adventurer's Realm	Help for problems, hints and tips, Best Games of 1989 *AMIGA and C64*	78
Advertisers Index		80

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

WHAT'S NEW
WHAT'S NEW
WHAT'S NEW
from Computamart

SPACE ACE
A superb game like Dragon's Lair. A huge game of cartoon graphics and digitised sound. The whole Laser Disk game.

DRAGON'S LAIR II
The sequel to Dragon's Lair. More scenes than before and even smoother graphics. A must for Christmas.

CONTINENTAL CIRCUS
Arcade 3D Formula 1 car racing with realistic pit stops. Car catches fire, you must pit to repair. All international circuts to race on.

POWERDRIFT
Arcade classic 3D Buggy racing game over various rugged courses. Against a variety of mean and wily opponents. Top conversion.

SPACE QUEST III
For those who love the Sierra adventure games this latest is a real treat. New graphics and even better control make this a must. Don't miss this one.

Computamart

Computamart Pty. Ltd., 622 Newcastle Street, Leederville, W. Australia 6007
Telephone (09) 328 9799, Fax (09) 227 7324, BBS (09) 328 4217

Bringing the world of Amiga to you fast!

Editorial

AROUND THIS TIME of year, the competition to catch the consumer's imagination reaches new heights of intensity. At the same time, a number of unscrupulous operators find sales are more than booming. Out there, in the second hand computer columns, are people blatantly advertising the sale of pirated software.

Unsuspecting buyers, and a fair number of suspecting ones too, are purchasing from these diskmongers. This practice is illegal and immoral. These get rich quick pirates are stealing from the pockets of software companies and program designers.

Would you knowingly support a person selling stolen cars, or hi-fi? Would you buy a stolen computer? Pirated software is no different. Yet, I still hear time and time again the most ludicrous argument that pirating is all right because software is so expensive. Well, next time I pass a Porsche I might just jump in and take it - after all, they're way over-priced, aren't they?

Sure, there's the occasional example of overcharging. But a smart buyer will find by shopping around that software in Australia has reached very reasonable pricing levels. There may be the odd exceptions. However, they in no way justify the scale of piracy which continues to this day and the blackest form of which is the sale of pirated disks.

Do you really expect the small industry which exists in Australia to survive forever if its very life blood is constantly sapped by these sorts of traders? What about dealers who spice up a deal by throwing in free copies of pirated software? It's up to us, as consumers, to say no to piracy.

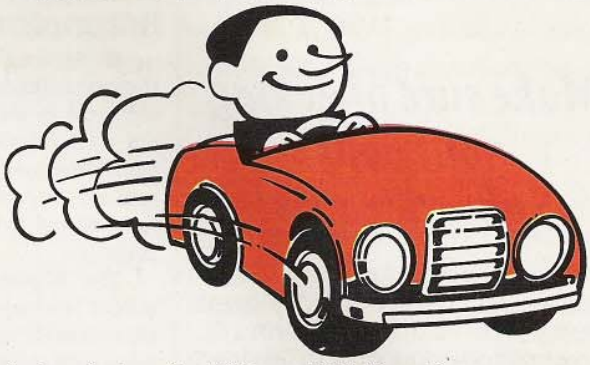
Advertising pays part of the bill to produce this very magazine. If the local companies don't survive, neither will the quality of this magazine.

Well, enjoy your holiday break. Take care on the roads - if you have to drive fast do it in *Test Drive II*!

Andrew Farrell

Cover picture: Super VHS is amazingly superior in quality to standard VHS. With 400 horizontal lines of resolution, and super crisp colours the improvements are immediately obvious, even on a standard colour television. We tested out the JVC HR-S5000EA player and GR-S77 camera together with the Neriki Desktop Genlock. See the article in this issue on Genlocks. JVC's local distributor, Hagemeyer, lent us the above equipment.

The Disk Drive that won't drive you up the wall



A Rolls-Royce? or a VW?
Up 'til now, in the Commodore 64 world of Disk Drives, you've had a choice of a VW or a VW. Now, the PACTRONICS Disk Drive gives you top quality at an unbelievable price. It has been quality designed and engineered by HYUNDAI, one of the world's foremost electronics manufacturers. Truly a "Rolls-Royce" at a "VW" price.

- Fast loading software puts your drive in the fast lane.
- Personal organiser software puts you in the drivers seat.
- 8 Great games for when you're just cruising.

CERAMIC READ/WRITE HEADS
Absolute top quality heads ensure accurate saving and loading.

100% COMMODORE COMPATIBLE
Plugs directly into your C-64, and supports 'daisy chaining' to add further devices to the serial line.

FREE
FREE—FREE
★ KWIK LOAD AND DOS UTILITIES DISK.
★ KWIK PAD — PERSONAL ORGANISER.
★ 8 SUPERB GAMES
TOTAL VALUE OVER $50

ONLY
$295

NOW!!
WITH A NEW ULTRA COMPATIBLE DOS CHIP!!

READ AND WRITE LIGHTS
No more wondering if your drive has 'hung up'.

STEEL HEAD POSITIONING BAND
Unsurpassed accuracy, no more loading trouble due to inaccurately positioned heads.

COMPACT, MODERN DESIGN
Colour keyed and styled to complement your C64

12 MONTHS ONE CONDITIONAL GUARANTEE

Pactronics

Best quality, best price and best service — insist on products from Pactronics
"the user friendly company"

FOR YOUR NEAREST RETAILER PLEASE CONTACT:

N.S.W.: Pactronics Pty Ltd, 98 Carnarvon Street, Silverwater (02) 748 4700, 407 0261
VICTORIA: Pactronics Pty Ltd, 51-55 Johnston Street, Fitzroy (03) 419 4644
QUEENSLAND: Pactronics Pty Ltd, 12 Stratton St, Newstead 4006 (07) 854 1982
SOUTH AUSTRALIA: Contact N.S.W. or Victoria Office
WESTERN AUSTRALIA: Pactronics Unit 13, 113 High Rd, Willeton 6155 (09) 354 1122

Available from your local retailer or call one of our offices.

☆ Subsrcibe ☆

The Australian
COMMODORE
and AMIGA REVIEW

Make sure of getting your copy Subscribe now!

Please enrol me for ..... issues subscription to The Australian Commodore and Amiga Review, commencing with the ..... issue.
I enclose a cheque/money order for $ ....

Please charge my Bankcard

Bankcardnumber:.....

.....

Expirydate:.....

Name:.....

Address:.....

.....

.....Postcode:.....

Please tick applicable box

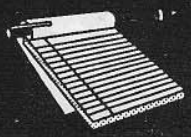
First Subscription ☐
Renewal ☐

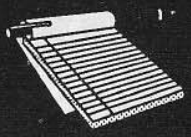
TO: The Australian Commodore and Amiga Review 21 Darley Road, Randwick NSW 2031 (02) 398 5111

Rates within Australia:
6 issues $19.00 (inc postage)
12 issues $36.00 (inc postage)
Minimum OS postage $35.00 AUS (Air Mail) more for some countries

If you don't want to cut this out photocopy it or just send a letter.

C64ers





New products - Britannica Software

● Although trying hard to expand their educational image to include entertainment in the United States, Britannica Software titles are only just starting to appear downunder. Computermate Products are importing some of the better titles, all of which retail at reasonable prices.

The Algebra series is ideal for high school students. Starting with the basics of numeral, number lines, number systems and evaluating expressions the series takes you all the way to irrational numbers, radicals, square roots and quadratic equations. Sound like a mouthfull? Perhaps you'd better brush up.

States and Traits is an active geography program especially for those hoping to tour the U.S. A game of trivia, history, geography and and current facts.

There's a whole bunch of other titles - for more information call (02) 457 8118 or ask your local Commodore dealer.

More from BASIC 8.0

● Fans of the C128 will be happy to know that Basic 8.0 is now even easier to get into. A new book on *How to Get the Most Out of BASIC 8* has been released. It's written by the guys who wrote the language. There's two disks included with plenty of examples. Topics such as graphics 3D solids, user input and utilities are covered. BASIC 8.0 and 80 column monitor, and a 128 with 64K of video RAM are required.

Free Spirit supplied our review copy. Briwall and Computermate both distribute their products locally. Try (062) 880131 or (02) 457 8118 respectively.

Fontmaster 128 Update

● My favorite 128 word processor has been updated recently to Version 1.4 and now includes a new format command known as "lk". This allows for a number of text files on a disk to be linked together for unattended printing. Previous versions had a "chain" command but as each new file was loaded from disk the "Load fonts and sets?" requester came up and you had to be there to answer it and so get the next file printing. No problems now, just use "lk" and go do something else whilst your work prints out.

There's an improved printer driver which will make Okimate 20 owners happy. The driver now handles 24 bit graphics which means that this printer will now print the fonts OK. The "user codes" for printing in ordinary dot matrix mode have been updated to work properly too.

Specialized codes may be entered by using the Setup Customizer to access features specific to your type of printer (such as changing color etc). Previous versions had a slight problem in handling the characters () , . ' " / ; : as they tended to be used as "breakpoints" when word wrapping. This has now been overcome and word wrap works beautifully.

There's a new utility on the *Spellmaster v1.4* disk called "Edit User" which is used to edit unwanted words from your user dictionary. It's very easy to use, just boot it and follow the prompts.

Fontmaster 128 may now be loaded and run from any drive/device number. For instance, to boot from device 9 simply put the disk in that drive and type BOOT U9.

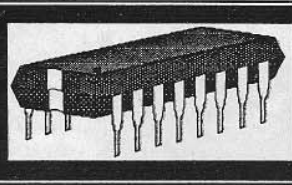
I've never had too many problems in using *Fontmaster 128* anyway (other than the requester mentioned above) and in my opinion what these update refinements really do is enhance one of the finest programs available for any of the Commodore computers.

Finally, if you have a Star NX24-10 and can't get a decent font printout with *Fontmaster 128*, try the NEC P256 driver (which uses 16 of the pins). I wrote to Xetec about the NX24-10 and that's what they suggested. ❑

If you find out where, let everyone else know

Fontmaster 128

Ram Rumbles



Key people join Commodore USA

● Australia's Commodore branch is not the only office to receive a new burst of life. Harry Copperman, recently appointed CEO, has appointed a number of new personal to key management positions. The names weren't plucked out of CES hat either - they include people with a serious background within the American industry. Let's hope the professional expertise they bring will further help the Amiga gain new ground as a serious computer.

Spot the Commodore

● Seen a Commodore somewhere unusual? Send it in! Tell us about it so we can tell the world. Exposure of the brand means more support for Commodore products which is better for everyone. Anyhow - here's a few that we spotted.

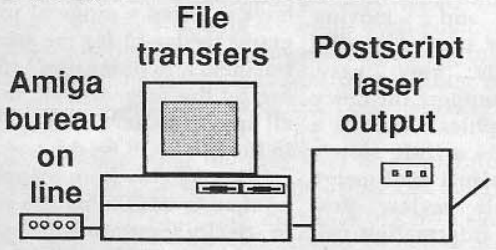
● **Neighbors** : Installed at the office by a guy wearing a Commodore T- shirt was a new A500. During the show it reappeared doing wordprocessing. At one point, a rather blatant plug, the installation man poses momentarily in a very staged fashion, on his way out of the office. We couldn't miss the Commodore logo on his shirt, and Amiga 500 box he was holding!

● **Flying High:** Take a close look at the control tower desks. They're full of Vic 20's!

● **At the ABC** : An Amiga was reported to be left demonstrating several graphic demonstrations in one of the staff areas. Over the period of several weeks, something in the order of ten sales resulted as impressed onlookers decided the Amiga was for them.

● **Food of the Gods**: The sequel to the much loved movie *The Gods must be Crazy* contains an Amiga in the lab where animals grow big from ingesting a special liquid.

● **Big**: Only just! A Commodore 1702 monitor connected to - wait for this - an Atari 800. ❑



Desktop Utilities

* 300 dpi Amiga postscript output
* Amiga, IBM, Mac, Atari formats
* File transfers between formats
* On-line upload facility
* Major Amiga packages supported

Our BBS auto-configures for 300, 1200 or 2400 baud and for your protocol. (8N1 is normally used.) Upload postscript, ASCII or a doc file in an Amiga package such as Professional Page, PageStream, PageSetter, WordPerfect or Excellence, or post a disk to us. For details and prices call our BBS or ask for our leaflet. We are on line most hours / 7 days.

Christmas offer to end of December:
Half price on every 10th printing order!

PO Box 3053 Manuka ACT 2603
Message Line: 062 - 39 6658
Bulletin Board: 062 - 39 6659

Merry Christmas
from the staff at
Australian Commodore and Amiga Review.

Please have a safe and fun Christmas break and we will be looking forward to spending another year with you all. Thank you for all your support.

See you in 1990

Update

Well, it is nearly Christmas and all of us at Pactronics want to wish you a very Merry Christmas and Happy New Year.

I would also like to thank all of my readers for their support and interest during 1989, and look forward to your continued interest in 1990.

In honour of the festive season, I would like to offer you the following presents:

● BUY one of our superb PACTRONICS DISK DRIVES, as advertised on page 3, send in your receipt and warranty card, and we will send you completely FREE a Word Processor - KWIKWRITE, OR if you like cooking - KITCHEN MANAGER.

● BUY the AMIGA M4 MOUSE, send in the receipt and warranty card, and receive a FREE MOUSE SHOE.

● BUY PROFESSIONAL DATARETREIVE OR BECKERTEXT AMIGA and get a totally FREE JOYSTICK OR COPY HOLDER.

● BUY any 3 PACTRONICS products, send in the receipt and warranty cards, and get a FREE CLEANING DISK OR GAME.

We have some brilliant new products for Christmas, including the IMG SCANNER for the Amiga, VIDEO WIZARD for the AMIGA or COMMODORE, BIRDS 'N BEES for the AMIGA or COMMODORE - a very interesting sexual training programme for ages 6-Adult.

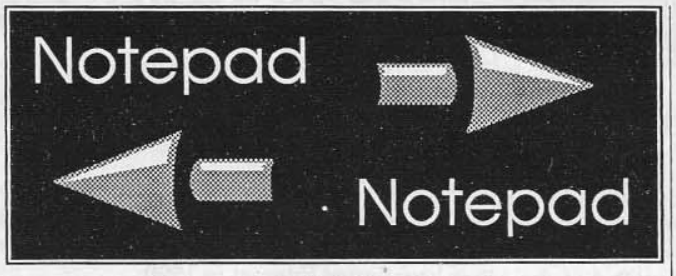
I can't think of a better present for someone with a COMMODORE or AMIGA than one of our great games. eg SKWEEK, THE GAMBLER, ADULT POKER, GOLF MASTER (tape only), LUXOR or MAFDET, and of course on the AMIGA - the brilliant TURBO CUP with FREE model Porsche. And don't forget our very wide range of Amiga books.

Once again, compliments of the season.

M.X.H.N.Y.

P.S. C64 owners - look out for "THE CHAMP" coming soon to your nearest retailer.

Advertisement



Read and write Macintosh disks - error

In Notepad in our November issue there was an item under the above heading in which there was an error. M.A.S.T. do not have a disk drive that works as both an Amiga and Macintosh disk drive that connects without the necessity for any type of interface.

Kickstart 1.3 incompatibility

● **Stories of many new games not working with Kickstart 1.3 appear to be exaggerations. We know of only one or two. However, we would like to hear from anyone who has more information on titles which are not working with the new Kickstart ROMs. In that way, we can publish a list to help others avoid getting caught.**

It should be noted that compatibility problems like this are not the fault of Commodore. Most of the time the hassles arise when software development companies do not stick to guidelines set by Commodore. These guidelines are decided specifically so that future upgrades of the operating system will not render software useless. By ignoring them, vendors run a big risk of doing just that.

Easy upgrade to Pro-Page 1.3

● ***Owners of Page Stream and PageSetter will be pleased to know they can upgrade to the latest version of Gold Disk's Professional Page for a mere $150. All you have to do is send the front page of your user manual, along with the money to the recently appointed Australian distributor, In Touch Tutorials.***

Major improvements have been made on this new version of Professional Page. Now, the nearest competition - Page Stream - will be set back a few steps. The latest release of ProPage uses CompuGraphics Outline Font Technology. This arrangement enables fonts to be scaled up to 127 points automatically. Output quality is excellent on LaserJet or Dot Matrix. PostScript goes without saying as the best.

However, CompuGraphics fonts also means more fonts! For an extra $200 you get an extra 35 typefaces - not to mention those which come with the package. This is very reasonable considering typesetters often pay hundreds of dollars for a single typeface.

On screen the result is as good as on page. This is an exciting development for the Amiga - watch for a full review real soon now. In-Touch Tutorials (02) 954 3735.

A2090 orphans

● Although it originally sounded as though owners of the 2090 hard drive controller for the A2000 would be able to upgrade, we have been assured that is just not possible. So despite owning Kickstart 1.3, autobooting is still not available. However, there is talk of a small card which will inhabit one of the spare A2000 slots. This card will look for the A2090 and then auto-boot from it. An expensive use of a slot and a lack of forward thinking from the designer. Nevertheless, a whole lot cheaper than buying a new controller!

ProWrite 4.1

● **If *WordPerfect* is a bit out of your budget, perhaps *ProWrite 4.1* could be the answer. Like *WordPerfect*, it's a port from the IBM world. There are a number of Amiga features, like pull down menus. Text highlighting is not supported - in other words you can't just grab a block and then copy, cut or paste. The method used is the old mark start of block, mark end of block and then do whatever you wish. This is a lot clumsier than Amiga users have come to expect.**

***ProWrite* makes up for a few shortcomings by excelling in other areas. The search and replace is very powerful, and moving around your text using the keyboard is very easy. There's no support for fancy fonts or graphics. There is a spellchecker - a little slow - and there's also a mail merge facility. Full review next month. For information call Pactronics on (02) 407 0261.**

AniMagic

● *Aegis are rumored to be a little unsteady at present - their demise would be a very sad thing indeed. However, someone is bound to take up their products and continue the Aegis tradition.*

The latest entry to the Aegis stables is AniMagic. If you're into piecing together animations, trying out special effects, and editing together various creations, this could be the program for you. AniMagic generates special effects and enables editing of animations with spectacular results. Effects include shatters, flips, confetti, colour effects, masks and translucency. Animations can be cropped and sized and transitions between sequences made smooth. Well documented - full review in the new year. Thank you to Aegis for our review copy. Aegis products are distributed locally by Computermate on (02) 457 8118.

City Desk 2.0

● A vast improvement over the earlier version (see review in this issue), however still insists you work with some rather unusual methods in order to get your text on the page. Imports various word-processor formats, and all IFF graphics. Text may flow around a graphic and the version we received (2.01) supported a full PAL display. This version does support Postscript and is pretty good value at $239. Once again, for info call Computermate on (02) 457 8118.

Small business delight

● **Digita International have released a range of programs designed for the small business and home use. Judging by the presentation, they all appear to have started life in the MS-DOS world.**

***Day by Day* is an organiser of sorts which enables you to track appointments, and provide yourself with a reminder of other matters such as when to pay monthly bills. Searching sounds pretty powerful - events can be recalled by any word or part of a word. The calendar will last you to the year 2000.**

***DG Calc* is yet another budget spreadsheet program. This version allows up to 512 rows by 52 columns. It's menu or command driven, includes cell locking, justification, relative or absolute replication facilities and a numerical accuracy up to 7 decimal places. You can print part or all of a spreadsheet, or cell formulae only.**

***Mail Shot* is a mailing list manager which works with your data in label format on screen - the idea being that**

you see exactly how it will look before you print. Duplicates are automatically detected, and subset files may be worked with. Various sorts are supported, and the label layout may be customised.

Full reviews of these products will appear in the January issue. For further information contact Pactronics on (02) 407 0261 or (02) 748 4700.

M.A.S.T. Tiny Tiger II

● *In our November issue we mentioned a new hard drive - the Tiny Tiger II, more powerful and more flexible than its predecessor. It comes with a host of features.*

Unfortunately we confused the phone number, so for more information the correct number to ring is M.A.S.T. (Computer Discounts) on (02) 281 7411.

Amiga Training School

● There's an adage in the computer industry - if all else fails, read the instructions.

Intouch Tutorials have long recognised the shortcomings of a manual. That's why they market a series of audio and disk-based lessons covering most major software and machines.

Until now, however, they haven't had anything to suit the Commodore Amiga. This was recognised as a major shortcoming, particularly as the Amiga is one of the market leading PC's in Australia and gaining popularity at the expense of other types of machines.

Instead of adapting their courses to suit the Amiga, Intouch decided to launch the Amiga Training School - and at the same time branch out into a new area for the company.

The Amiga Training School is set up as a "classroom" situation. Each of the "students" work with others in a group, with access to an Amiga computer. As the lecturer demonstrates the functions of the machine or techniques to be used, the students can follow on their own machines. Of course, the lecturers will be able to explain any difficulties the students might come up with - then and there.

There are two different courses available.

The first is for the absolute beginner, starting with setting it up. It is intended to give new buyers of the Amiga or even prospective buyers a broad overview of the machine and its very sophisticated capabilities.

The second course is for more advanced users, covering the CLI (Command Line Interface) and some of the more advanced uses of the Amiga such as DTP, graphic digitisation and even video and genlocking.

Each of the courses lasts three hours, and includes demonstrations of the latest Amiga software.

Tony Cuffe, General Manager of Intouch Tutorials, sees this as one of the course's hidden benefits. "Those attending the course get the change to see and play with the latest Amiga software without having a salesman breathing down their neck," he said.

The Amiga Training School has been set up with the blessing - and the support - of Commodore Australia. Commodore have provided Intouch Tutorials with several Amiga 500 computers which the students will use.

Intouch Tutorials can be contacted on Sydney (02) 954 3735 for further information or for course bookings. ❑

AMIGA PRODUCTS

Hard disk drives ready to use from $890.

External Slimline disk drives, wirh switch $200.

Starcursor joysticks $54.00. ECP Xmas Packs.

All Pactronics and ECP products available. New Abacus Amiga manuals in stock. Pen Pal in stock.

Quality Computer and printer accessories.

Latest Amiga Magazines, Australian Commodore and Amiga Review, other overseas publications and software available.

Bi-monthly Amiga workshops. Next meeting on Sunday the 3rd of December. Ring for details.

New Star FR10 colour printer in stock.

WHITE'S COMPUTERS

"Service is our moto"

(02) 634 6636

37 Daphne Ave. Castle Hill 2154.

Bankcard/Mastercard/Visa Welcome

THE HARD DISK CAFE

Shop 9-15 Bungan St
(entrance Akuna Lane)
Mona Vale NSW 2103

Phone: 99 5551
A.H. 411 2081

AMIGA 500 - AMIGA 2000
COMMODORE COLT - PC 10
SOFTWARE - HARDWARE
COMPUTER ACCESSORIES

AMIGA VIDEO TUTORIAL FOR BEGINNERS
FEEL AT HOME WITH YOUR NEW AMIGA
COST $29.95
HINTS & TIPS
LEARN HOW TO BACK-UP
COPY - FORMAT DISKS - SAVE - LOAD

MAIL ORDER FORM
BANKCARD/MASTERCARD/CHEQUE/POSTALORDER

NAME: .....
ADDRESS: .....
PHONE: .....PC: .....
PAY BY CHEQUE: ..... B/C: ..... M/C: .....
P/ORDER: .....
CARD NO: .....
EXPIRY DATE:.....
SIGNATURE: ..... DATE: .....

LETTERS

A faster Amiga on the cheap

● While everyone would like to have a faster computer, increasing the speed on the Amiga can be expensive to the wallet. A 68020 CPU board costs around $550 which is prohibitive to the majority of users.

There is a cheaper alternative, installing a 68010 CPU to replace the 68000 CPU. It's the same size as the 68000, so it just plugs into the 68000's socket on the motherboard. It is fully compatible with the 68000 command set plus it has four new commands and three extra registeres. It processes the 68000 commands faster than the 68000 does at the same clock speed. (Up to 80% faster for some commands.) The average increase is 16%.

The SetAlert command in WorkBench 1.3's c: directory enables the additional debugging instructions in the 68010.

The cost for a 68010 CPU chip is about $35, available from VSI Electronics Aust Pty Ltd, phone (02) 439 8622.

For more information on upgrading to 68010, check out the Abacus book *More Tricks & Tips for the Amiga* (available from all good computer shops).

So for an investment of $35 (for the 68010), you can have an Amiga which is 16 - 80% faster than the average one without costing you an arm and a leg.

C.J. Wakeham
Miranda NSW

Getting the 1250 to work!

● I am writing in response to the article that you wrote in the June 89 issue "Choosing a Printer".

In this article you said that the MPS 1250 had "simple design faults", and that when you loaded paper it got caught in the printer head. Well, this is easily solved. Before paper is loaded into the printer,

1. turn printer on,
2. press "on line" (so that the ready light is out)
3. press "FF", the "paper out" button should flash red and the printer head will centre
4. select friction feed - place paper in back
5 press "FF" and the paper will load
6. press "online". Voila!

I hope your article did not put anyone off the MPS 1250, it's an excellent and cheap printer. I use it for screen dumps by the Expert Cartridge. With Geos V.1.3 all you have to do is use the Epson FX80 drive and change the dip switches to this position:

1 - off	5 - off
2 - on	6 - on
3 - on	7 - off
4 - off	8 - off

This gives a perfect 80 column printout for a printer that definitely does not have "extra bells and whistles" but performs as good and if not better than any printer for the C64 in its price range. I believe it should be definitely recommended.

Paul Millward
Salisbury North, SA

Ed: Well, there you go. One of several letters we received from satisfied 1250 customers. But then it could be a case of until you try something better . . .

W.O.K.?

● I am considering buying extra memory for my Amiga 1000 and I have some trouble in knowing the difference between a W.O.K. board and a Spirit board. Could you please tell me the difference?

Stuart Johnson
Mt Eliza, Vic

Ed: W.O.K. means with zero kilobytes. In other words no RAM - you need 512K RAM to make it worthwhile.

1541 - easy fix!

● In your September issue a C64 owner, Brenden Blanchard, was facing an irritating, if not entirely frustrating problem with his 1541.

Failure for a 1541 to recognise a disk at all sounds unusual, but recognising the disk again after a period of 30 minutes is even more irregular! I can sympathise with Brendan, as I have had a similar problem with my 1541. Failure to recognise disks is correspondant with my own experiences, however I did not wait 30 minutes to see if my drive worked.

My first impression was that the drive was misaligned. Further examination of the situation aired that my drive's read/write head was hovering between the disk surface and oblivion, no longer able to reach the disk surface to read its contents. Even at rest it would not reach its normal place.

The drive, however, did not have to be torn apart in order to fix the problem. All that was required was the formatting of an unused disk with:

```
OPEN15,8,15,
"N0:TEST,OK":CLOSE15
```

The process of formatting requires the read/write head to be knocked back to a reference point as there will be no markers on an unused disk surface to reference to instead (the purpose of formatting in the first place is to put these markers on the new disk). This referencing, in this case, frees up the head getting it "unstuck". The entire formatting operation is not necessary, but allowing the full format cycle to proceed will act as a diagnoses on your drive's health status after the trauma.

Initialising the disk will probably not prove to be successful. It doesn't move the R/W head around enough to allow the drive to reorganise itself.

I would be interested to know more about the problem Brenden has had and the circumstances. This problem has occurred with my drive a number of times during en-

I would be interested to know more about the problem Brenden has had and the circumstances. This problem has occurred with my drive a number of times during endeavours to back up my trusty GEOS. Testing my copied version led to the drive head tripping and hammering severely, landing the drive head in its perch cringing.

Perhaps Brenden uses a lot of highly protected software which may have made the drive hammer a bit much. There are some nasty protection techniques these days.

I.S. Mulry
Kingswood NSW

C64 drive wreckers

● I have been reading your magazine ever since I can remember. Even though I have never had to write to you for help, I find that reading letters people (fellow 64ers) have sent to you over the years have helped me enough to resolve any problems I've had myself.

I feel now though I must write to you and let all your readers now know of a program I received just recently, called *Disk Hum*. As the name implies, when loaded and run, the program makes your disk drive hum the song *Daisy*. I thought this was really amazing at first, until I tried to load another program after it. No way. The screen flashed orange and every second or third program wouldn't loadat all. Read error after read error. After about 10 attempts the heads were completely out of alignment and nothing would load. Also I don't know if any damage has been done to the motor or not. I'm still waiting for the repair shop to let me know what it will cost.

I hope this will help all your 64 readers to avoid this problem program. Thank you for a most informative magazine all these years.

Michael Fitzsimmons
Whitfield, Vic

Ed: Thanks for the support and the info, Michael.

Printer Ribbons

COMMODORE		Epson FX/MX80	13.50
		Epson FX100	15.50
MCS 810/20	16.95	Epson LX800	13.50
" colour	17.75	Epson LQ500	15.00
MPS 801	11.75	Epson LQ1000	17.00
MPS 802	12.00	OKI 183	12.00
MPS 803	11.00	P'sonic/Logitec	12.50
MPS 1000	8.75	Riteman C+/F+	16.00
MPS 1200	12.50	Star NX10	12.50
MPS 1230	26.50	Star NX15	14.75
MPS 2020	20.25	Star N24-15	18.95
" 4 colour	28.50	Star NX1000	8.75
TP 8023P	15.50	" 4 colour	22.50
VIC 1520	16.50	Star NX24-10	18.50

- quantity discounts for 6+, 12+, 24+
- many other types available
- single colours available at a surcharge
- all these (except MCS 810/20) recyclable (reink or reload)

D-I-Y RIBBON RECYCLING

REINKING MACHINES :$190
ROLLED RELOADS to fit most cartridge types (black, colour, 4-colour) :POA

Lazarus Ribbons
70 Wolseley Rd
Mosman NSW 2088
tel: (02) 960 2737
(008) 24 9991
fax: (02) 968 1276

GRAPHICS-PALETTE

GRAPHICS DISK-ZINE FOR THE AMIGA

ISSUE No: NINE
THREE DISK SET

- NOW WITH 40% MORE!!! -

INCLUDED IN THIS ISSUE :

Full reviews of the VIDEOPAGE titling program.
The new OPTICKS ray tracing software by Incognito.
P.A.S.E. (Professional Animation Sequence Editor).
The all PAL rendering program PAGERENDER 3D.
ELAN PERFORMER the DTV software controller.

How to create exploding pixel fonts in DPaint III.
PLUS A REAL FIRST: An animation created on a professional motion control track using the Amiga.

All the above plus, reports of new software/hardware, graphics/DTV hints and tips, articles, letters etc, etc.

STILL ONLY $26.00 (Three Disk Set) plus $2.00p+p.

From: FROMATE PTY.LTD
66 Parer Street
BURWOOD 3125
Victoria.

P.C.M. COMPUTER ENTERPRISES

AMIGA Products

VDrive5.25	External 5.25" Floppy Disk Drives NEC mech/on-off/write prot.	$250
VDrive3.5	External 3.5" Disk Drives NEC mech/on-off switch	$220
VDriveH40	40Meg Hard Drive Software Installed/external power	$699
VDriveH66	66Meg Hard Drive Software Installed/externall power	$999
VMem1	1Meg A1000 RAM Expansion Battery clock/on-off switch/pass-thru	$600
A500	Monitor Stand - all steel	$40
A500	Monitor Stand/Drive Case with 5.25" Floppy built in	$300
A500	Monitor Stand/Drive Case with 3.5" Floppy built in	$285
A500	2 Meg Spirit insider with 2 Meg	$840
A500	2 Meg Spirit insider with 1 Meg	$615
A1000	1.5Meg Spirit insider with 1.5Meg	$700
A2000	8 Meg Expansion with 2 Meg	$840
A2000	8 Meg Expansion with 8 Meg	$2000
A1000	Replacement 3.5" Drive ready to fit	$180
A500	Replacement 3.5" Drive ready to fit	$180
5.25"	NEC mch 80 track 720k/880k/1.2m Amiga and IBM compatible	$180
Disks	3.5 No Name DSDD full warranty minimum Qty 100	$165
	5.25 No Name DSDD full warranty minimum Qty 100	$55

PO BOX 70 NOBLE PARK, MELBOURNE,
VIC 3174 Telephone (03) 701-0343

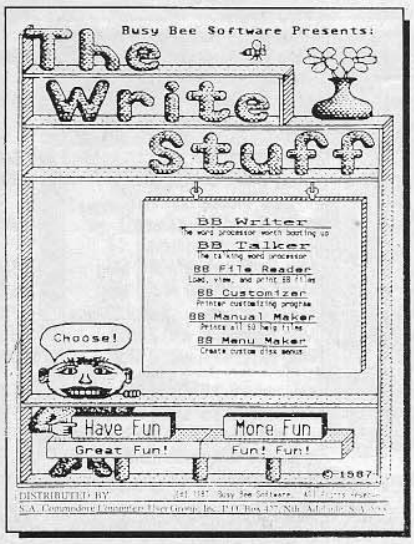
Have you got "The Write Stuff"?

We examined an earlier version of The Write Stuff some eons ago. Now it's available for the C128 too - and the whole program has been improved considerably. One of the few user supported software success stories. Eric Holroyd, still a mad keen C128 user despite owning an Amiga, got busy and put it to the test.

THE WRITE STUFF comes in two separate versions. For the C-128 you get a "flippy" disk with a 40 column version on one side and and 80 column version on the other. I'd never seen it before and decided to write about it as I learned. This review is my first attempt at using *The Write Stuff*.

I'm using the C-128 version in 80 columns in order to compare it with my all-time favorites: *Fontmaster 128* and *Fleet System 128*. *The Write Stuff* is actually a suite of programs with the word processor being known as *BB Writer*.

I had a very swift look through the instruction book before booting the disk (just as we all do!) and found very quickly that the commands are quite logically arranged and use letters of the alphabet prefixed by CTRL keystrokes. Press CTRL/1 to select, then use a function by pressing an appropriate key: "u" toggles underlining, "c" toggles centering, "i" toggles insert mode and so on. This puts a control character in Reverse Video on screen so that you can see what's happening.



A further set of embedded commands are accessed with CTRL/2 and there's a huge range of functions covering such things as: Auto Indent of paragraphs, headers/footers, left/right margins, line spacing, margin release, printing of odd and even pages, page numbering and a great deal more. These commands are entered on the "command line" at the top of the screen in the form: bl4 (which gives 4 blank lines) or ai5 (auto-indent by 5 spaces). All nice and easy.

I've currently got Insert Mode switched on (CTRL/i) which lets me type away madly whilst the text opens up to accommodate my additions. I'm also using Keyclick (CTRL/k) which makes my C-128 sound just like a real typewriter. I've already set my external drive as the data disk drive by pressing CTRL/Shift D (lets you use separate drives as 8 & 9 or a dual-drive unit as 0 & 1).

Now to save the work I've done so far before I do something stupid and wreck it all. CTRL/1 then s (for Save) puts up a requester for the file name to save. I did the Save twice to see what happens and sure enough I was told that the file already existed and did I want to replace it, Yes or No? Good stuff.

Then there's a whole series of keyboard commands accessed by pressing CTRL by itself and it's here where you really see the power of *BB Writer* at work. In addition to the usual things like setting the screen and background colors, tabs, wordwrap etc, you can define some pretty powerful macros to be able to type frequently used words and phrases unique to your profession or industry easily and quickly.

"Macrotyping"... a great time saving feature

● Busy Bee Software (the publishers of *BB Writer*) have also provided a "macrotyping" feature accessed with CTRL/m which then lets you call up a whole range of words and phrases shown as one or two character abbreviations. For example: "have been" is represented by "hb" and with macros switched on all you have to do is press Space, type "hb", press Space again and the phrase miraculously appears on the screen. There are about 90 of these abbreviations listed, including:- Sincerely yours, I will, has had, necessary, everywhere, could be, would, we're.

This is a great time saving feature and one which I know I'm going to like .

Another set of macros have redefined all the CTRL menus I talked about above and with that switched on all you do is press the logo key plus the feature key, ie C= & s is the same as CTRL, Shift and s. Again, these could be very handy to the power user who demands a lot of speed and easy access to functions. So far, so good!

I've now found that the C-128's HELP key (on C-64 you'd use the Up Arrow key) puts up a screen full of commands, then a press of the Commodore Logo key puts up a further screen of useful stuff.

I'm beginning to feel comfortable with *BB Writer* after using it for just this short time and I'm already appreciating some of its finer points.

I haven't found a Word Count yet, I hope there is one. Yes, there is! Page 29 tells me that CTRL/= will give me a word count plus the number of bytes free. Here goes. Very quick too! I now know I've typed 770 words and have 58808 bytes free (think of one byte as a character). The counter also came up with the fact that I've used 17 Blocks.

I've just found the Split Screen feature (available only in the 80 Column 128 version) which can show two parts of the same document, OR you can have two documents in memory at the same time and view them in the Split Screen. Very useful when proofreading as you can edit a copy whilst referring to the original.

This could turn out to be a very long review as I keep finding more and more useful features. Here's one for Viewing Files which lets you point to a file in the Load Menu and view it by pressing "v".

The great thing is that you can do this without affecting text already in memory as the file to be viewed doesn't overwrite memory. If it's an ASCII file you can convert it through TRUE ASCII, PET ASCII or SCREEN CODE with a keypress and there's even a feature to Strip Return characters from a file.

Extra features

● Other major features include: a simple calculator, alarm, screen dump of text, superscripts and subscripts, italics, boldface, condensed, the ability to define special characters (your logo?), decimal tabs, toggle NLQ and Draft printing, automatic capitals (starts each new sentence off with a capital letter. Great!)

Then there's an "Outline Generator", which is a nice feature in itself, and which lets you sketch out a speech, framework of an article or book etc, and prints out with your choice of indented spaces for sub-heads and sub-sub-heads etc.

A sample file (called *BB Outliner*) is on the disk and is pretty well self explanatory. A Search & Replace feature is included which will find and substitute a word or phrase very quickly. A feature which I'd come to love in *Fontmaster 128* (called "Gobble" in that program) is known as "Eat Text" here. CTRL/e lets you delete a character, word, sentence, paragraph, everything below the cursor, or even all the text. The nice thing about this program is that it has a "Restore Text" feature to undo what you've Eaten if you've been a bit hasty.

I looked in vain for a Cut & Paste feature and eventually resorted to reading the manual (!!) The answer is: Use "Eat & Restore". Simply "Eat" the text (CTRL/e) then press "p" to see the whole paragraph disappear in a flash. Now cursor to the spot you want to put it, then press CTRL/rn to paste it instantaneously. Works like a charm!

The only thing to be careful of is that doing a screen preview of your text erases the text buffer so be sure you've Restored (pasted) the text before previewing. Incidentally, you can Sort a list of data by first Eating it then Restore it in alpha sorted order (ascending or descending) with CTRL/ Shift r. Very handy for lists of items.

Eat more text

● There's also an "Eat more text" feature (CTRL/Shift e) which lets you add more text to the buffer without erasing it. Using this you can gather bits of text from various places in the document and then Restore the whole buffer as one paragraph.

BB Writer lets you print in two columns in one pass. To do this, set a column margin greater than zero (cm3 leaves a space of 3 characters between columns) and your second column will be a mirror image of the first. The right margin setting will be ignored and if there isn't enough text to fill the second column it'll be left blank. Columnize short documents by shortening the page length. There's a sample file on the disk to see how it's all done. Moving around the screen is easy enough and the whole thing is pretty easy to drive as I've found out by doing the review this way.

Anyway, there are a number of tutorials on the disk to work through and the manual (which I've referred to throughout this write-up) suggests that you do work through them to get the best from the program.

Before you print you can preview the whole document the screen with boldface, italics, underlining and so on shown exactly as they'll be printed. This makes proof readi easier and saves a fair bit of paper too.

If you've imported a 1581 drive yourself (Commodo don't seem as if they'll ever give us the opportunity to get o through them do they?) this program is compatible with it. also works well with the 1700 and 1750 RAM expanders.

If you're a *Superbase* user you'll be pleased to know that *B Writer* will interface with it and that you may output data fro *Superbase* for word processing. You may also import data t *Superbase* from a *BB Writer* mail merge file for databasing.

Font Toggle is a function that lets you swap between the standard CBM font and one you've defined yourself (40 column only). Using "Ultrafont" from Compute's Gazette (Sept 86) you can redefine the "BB Font" to suit yourself then toggle between the two fonts for your screen display.

Here's an "idiot feature" that seems to have been tailored for a situation I had just last week: If you've ever kicked yourself (as I did then!) for resetting the computer when you thought you'd saved the text file and then discovered that you hadn't after all, then you can effect a complete recovery of the program, including your text, simply by entering POKE 787,234 then SYS 2130 (C-64) SYS 7250 (C-128). Brilliant!

If you have material that you want to keep from prying eyes you can invoke the Encryption feature which displays

NEW **DISKASSY 2 C64 Utilities** NEW

Buy direct from the author and save

FONT DISKASSY 2.1: Powerfull editor. Create & save windows.

GRAPHIC DISKASSY 3: Convert between 16 formats including characters & sprites or customize your own load and save format. Compress pictures for use in your own program. Create a window (picture portion), edit and save it to use in your own program. Colour & window editing.

PICTURE PUZZLE: Strategy game. Saves game & low scores.

SPRITE IRQ 1.1: Advanced IRQ sprite animation control for your own programs with collision effects, bounce, joystick, etc.

SPRITE DISKASSY 2: Full featured editor with animation.

DISK DISKASSY 1.2: Complete editing of directory, bam & sectors.
Multiple file scratch. 250 block selective fast load menu. Disk index. File recovery. Error & data scan.

DISKASSY PACKER: Compress & pack files. (250 blocks maximum).

SOUND DISKASSY: Music & sound effects for your own programs. Player for jukebox. Editor has advanced music processor and over 30 parameters for each voice. Relocator saves the IRQ file.

HEAPS of others on a double sided disk with instructions.

ONLY $22.00 inc. postage. Send cheque or money order to:

DISKASSY, C/O P.G.Chugg, Main Road, Lebrina, Tasmania 7254.

garbage on screen unless your secret password is entered first. Make sure you keep a record (somewhere else!) of that password or you'll never be able to read your own files!

Other Write Stuff Programs

● Some of the other Write Stuff programs are:

● *BB Menu Maker*, which lets you create custom disks with programs loadable by cursor selection. This program must be run in 64 mode but menus created will work in either 64 or 128 mode (the latter in either 40 or 80 columns).

● *BB Manual Maker*, which prints a hard copy of all 68 Help files on the disk. It prints all the odd-numbered pages first then prompts you to flip the paper over (assumes you're using tractor feed paper) to print the even numbers on the back.

● *BB Customiser*, which sets up your printer defaults. This is a very easy to use feature which lets you set up even very strange printers. The excellent manual says that "many printer manuals are not very clear about what decimal values are being sent to the printer to control its special features...". And I thought it was ME!

Anyway, the book takes you through what to do to get your particular printer up and running and there's a printer test file to check that you've done it all OK. If you're a Xetec Super Graphics user (like me) you'll love the little program that downloads your two selected fonts to the interface, then loads *BB Writer* for you. The fonts are called up for use in your document with either embedded commands or keyboard macros that you define yourself.

● *BB File Reader* is only on the C-64 version and is very useful if you want to send a disk of your text files to a friend who doesn't have the program. Simply put *BB File Reader* on the disk and up to 44 text files and he/she will be able to view or print them. You could even use this as a sort of electronic newsletter.

● *BB Talker* is also on the C-64 version and uses S.A.M. (the Software Automatic Mouth program included on the double-sided C-64 disk) to SPEAK your text files. This would be a boon to non-sighted typists, or even those with a diminished degree of sight. It's also great for kids as a learning tool and there's a number of nursery rhyme files on disk too to amuse the very young ones.

C-64 users with CBM 1525/801/803 printers can use a "wedge" program called "PrintRite 64" which was in RUN magazine of May 1987. There are complete instructions for this in the manual and it improves the output from those printers immensely.

I couldn't find this program on the disk but it would be available from S.A.C.C.U.G. or your local user group (as would the Ultrafont program mentioned earlier) and is worth chasing up if you have one of those printers.

I found very few problems in getting to know *BB Writer* as it has much in common with *Easy Script*, *Superscript* and *Fleet System* as regards commands and operation. Users of those programs will find the same thing and it's nice to know that a total of 14 word processors are supported by *BB's File Converter* so that files previously stored in one of those formats can be used in this one too.

I've made a chart showing what differences I could see in the two versions. There could be something that I've overlooked as I did all this in my very first session with *BB Writer* but there's enough there to give you the idea.

C128 users . . .

● A little tip for 128/1571 users: As the C-128 version comes on a "flippy" the drive seems to "hunt" for a long time before putting the directory up on screen. If you have the updated ROMS in your drive this won't affect you, but I don't so what I did was first of all format a blank disk with 'Header "Diskname",Iid' then used a disk copier to copy the appropriate side of *The Write Stuff* disk to it. There is no copy protection so it's very easy to do this. My new disk loads very easily on the 1571 and I recommend that you use this method to make your own master disks then put the originals away somewhere safe.

My main complaints about *BB Writer* were that it had no Spell Checker, Thesaurus or Dictionary. Also, I'd have liked to see a warning that the text buffer was about to be emptied when previewing to the screen. I'm not into telecommunications so it didn't worry me that there was no modem facility as such. Apart from those things (which are all mentioned as possible update features on the mail-backcard) I think it's a very good word processor and excellent value for money.

Review copy from S.A.C.C.U.G.Inc,
PO Box 427, North Adelaide,
SA 5006

Quick comparison of the C-64 and C-128 versions

Function	C64	C128
Alarm	No	Yes
Auto Capitalization	Yes	Yes
Autoboot Feature	Yes	Yes
BB Manual, BB Menu Maker	Yes	Yes
BB File Reader	Yes	No
Buffer	9k	16k
Calculator	Yes	Yes
Change Case	Yes	Yes
Columns Displaye	d40	40/80
Cut & Paste (Eat & Restore)	Yes	Yes
Decimal Tabs	Yes	Yes
Documentation on Disk	66k	90k
Dvorak Keyboard toggle	Yes	Yes
Encryption	Yes	Yes
Extra Text Area	Yes	Yes
File Translator from other WPs	Yes	Yes
Font Toggle	Yes	Yes
Headers and Footers	Yes	Yes
HELP files (view any time)	64	68
Justify Text	Yes	Yes
Linked Files feature	Yes	Yes
Mail Merge	Yes	Yes
Macrotyping	Yes	Yes
Macros for keyboard & printer	Yes	Yes
Merge & Append Files	Yes	Yes
Modem Support	No	No
NLQ/Draft toggle	Yes	Yes
Outline Generator	No	Yes
Preview in 80-columns	Yes	Yes
Print from any page	Yes	Yes
Print Double Cols (one pass)	Yes	Yes
Read/Write SEQ/PRG/USR files	Yes	Yes
Restore and Sort	Yes	Yes
Save text as ASCII file	Yes	Yes
Search and Replace	Yes	Yes
Set Line Spacing & Page Size	Yes	Yes
Set left/right/top/bottom margins	Yes	Yes
Spell Checker	No	No
Speech using SAM	Yes	No
Superbase compatible	Yes	Yes
Support DOS Commands	Yes	Yes
Support Two Drives	Yes	Yes
Support RAM Expanders	Yes	Yes
Text Area Available	22k	63k
Thesaurus	No	No
Tutorials on DisK	26	30
Use Xetec font downloader	Yes	Yes
Wait between pages facility	Yes	Yes
Word Count	Yes	Yes

Commodore Annual 1990
On sale in Newsagents and Computer Stores

DON BLUTH'S

SPACE ACE®

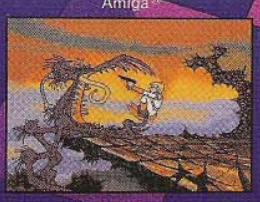
Ace is being attacked by the evil commander Borf who plans to take over the Earth by using his dreaded weapon . . . the Infanto Ray. Only you can guide Ace through treacherous battles to destroy the Infanto Ray, save Earth and rescue the beautiful Kimberly.

Space Ace,® the arcade follow-up to Don Bluth's Dragon's Lair® is now available with the breathtaking full-screen animation and sound of the original laser-disk game. Advanced compression techniques allow for over 40 fast-action scenes to be brought to life on your personal computer.

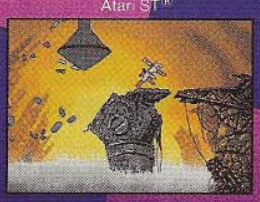
Distributed in Australia by Questor.

Also available or coming soon for Apple IIGS, Commodore 64, Spectrum and Amstrad.

Amiga®



Atari ST®



IBM®

Dragon's Lair, Space Ace and Bluth Group, Ltd. are registered trademarks owned by and us
Bluth Group Ltd.; Character Designs © 1983 Bluth Group; All rights reserved; Space Ace

FOR FURTHER EXCITING QUESTOR PRODUCTS FILL OUT THIS CORNER & SEND TO **QUESTOR, MAILBAG 9, ROSEBERY, NSW 2018**

Name

Address

Postcode

Machine Type

City Desk Revisited
Version 2.0 Arrives

According to Rod McCallum, the new City Desk 2.0 PAL version is so good, that some higher-priced desk top publishing packages will have to brush up their act.

CITY DESK IS A desktop publishing program for the Amiga. In the form of "Version 1.1" it has found high favour with many throughout Australia who use it as I do, in a professional or semi-professional capacity. In August 1988, registered owners received details of an upgrade, Version 2.0, that would shortly be released. "Send back your original disc, manual and packaging and you can get it for $35US", said the publishers in Texas. Like many others, I shot off my request within days of being notified.

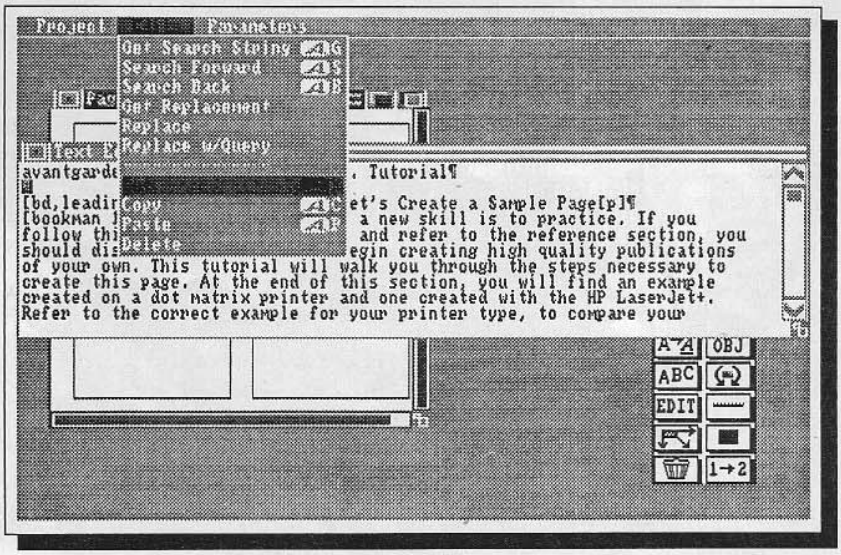
Fourteen long, weary months went by, during which I wrote countless letters to the publishers and met many others who were in a similar situation. A brotherhood of *City Desk* arose with friendships made in Queensland, New South Wales, South Australia and West Australia!

Then, on Tuesday, October 10th, at 11.45 a.m. the sky fell! The postman, true to the expensive advertising campaign that says that Australia Post delivers mail, did just that. He left my brand new, genuine PAL version *City Desk 2.0*! After a wait of just over 14 months for my upgrade from version 1.1 it had finally arrived!

We were just finalising our monthly newspaper, *The Encounter Coast Report*, still using Version 1.1, so it was a bit late to use it to put together our October issue. I had to wait for two days until I could really get my teeth into it. But now, four days later, with many sheets of paper having passed through both my dot matrix and laser printers I can tell you. This program is magnificent. I might say that, in the last couple of months leading up to the final delivery of *City Desk*, a friend of mine from Queensland had kindly let me borrow his version of *Page Stream* to have a close look. "Give up, Roderick", was the advice. "The sods will never send your upgrade. Have a look at this instead."

I don't want to make too many comparisons between *City Desk 2.0* and *Page Stream 1.6* except to say that, as I use a DTP program in a professional capacity, there is no way that a dot matrix can give the typeset quality that I get from my Laserline printer. While *Page Stream* does wonders for dot matrix output it is still a bit blobby in the 10 point to 14 point area. I also got a bit weary of the eternal glitches. *Page Stream* needs more work.

But *City Desk* doesn't, except for one feature that I shall cover a bit further down the track.



Text Editor

Text Editor

● The text editor is marvelous. A full page screen full of your imported text. You have bags of room to move around, shifting paragraphs, cutting, pasting, copying. At this stage you can add the formatting commands that allow *City Desk* to give such excellent results. You can make sections bold, italicise, underscore, indent paragraphs, set tabs, change type faces and font sizes. The format of the editor is very similar to a *Scribble* page, and *City Desk* supports this wordprocessor's files just as it will Notepad, *WordPerfect* and others.

City Desk's page display has always been a favourite with me. I am not keen on programs that make me build and fill boxes. Setting up columns with this program is easy and text flows in at the click of a mouse and keeps flowing, column into column, page after page until complete. You can also auto-hyphenate your copy, giving a most professional result, particularly if you are working with narrow columns.

Version 2.0 has a full-blown graphics editor, rather like a junior *DeluxePaint*, letting you construct your own, special pix, cut them like a brush, and drop them onto any page you wish. On the page, you can resize, either in aspect ratio, which means that it won't distort, or you can distort it if that is the effect you want. Although I haven't tried it yet, the *City Desk* manual suggests that you can multitask with *Deluxe Paint*, if you have enough memory.

Other DTP programs I've had a look at can flow text around graphics. The results are there, but always sitting in a rectangular space. *City Desk*, however, will actually follow the OUTLINE of irregular objects. No longer do you have to endure the "short back and sides" effect, and you can tell the program how much standoff you need between text and graphic. This is another very professional touch that I shall take much pleasure in using.

Toolbox

● The toolbox is simple to manipulate. There are sixteen icons and two of them I find particularly useful. One is the "explode" tool that zooms any page magnification so that the whole monitor is filled with your work. The other is the box tool that creates screened boxes from zero percent to 100 percent. It means that you can emphasize a section of type, say, by laying it over a 20 percent stipple. Again, a professional touch that shows the extent of planning that the programmers have put into this software with serious users in mind.

The resizing tool from the toolbox is extremely versatile. With it you can select a block of type and stretch it out to double column. I often set up an article with a two column subhead in bold under my headline, then drop back to single columns. The sizing tool also lets you cut up your copy into chunks so you can move them around the page with ease. A subeditor never had it so good!

For laserprinter users there is pure gold in the Laser Utility that comes on the second disc. With it you can now download soft fonts into your HP laser printer, and just as a bonus you'll find four downloadable fonts on one of the data discs giving you 12 point, 12 point bold, 12 point italic, and 24 point bold under the key of CMR. Soft fonts will increase your type book considerably and are much cheaper than buying cartridges. If you have a Postscript laser all of Version 47 fonts are here in any size, bold, italic and bold-italic.

For 24 pin dot matrix users one of the data discs has a sampling of fonts that have been structured for 24 pin printers. You'll find a face called "Unity" with 6, 10, 12, 18 and 72 point fonts. Also on data discs (there are four discs that come with *City Desk*) are a hard disc installation program and a utility called DU5 that helps you maintain and manipulate your files. If you've given up on learning the complexities of the CLI this is for you. There is also a section on this program that shows, on the screen, how fonts will look before you print them out.

You can also use macros. This is a highly useful facility for those of us who are lazy. I will be able to store bits of data such as addresses, publisher's information etc. as short macro commands and get *City Desk* to do the work by printing them out in detail where I decree.

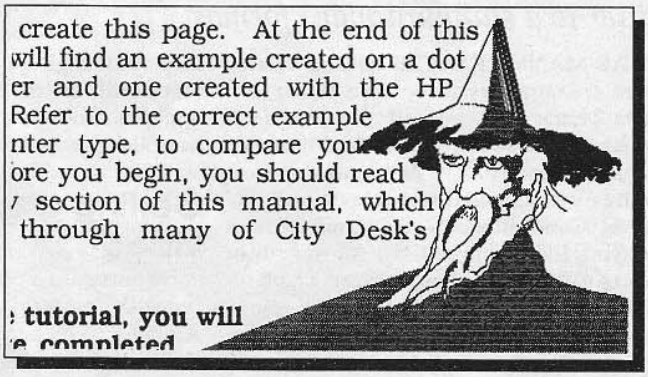
How easy is it to learn a program that offers so much? No problem at all, and that is due to two things, the way the program is structured, and the first class manual that comes with it. There is just nothing difficult in this nifty, ring-bound book. Sometimes manual-writers get carried away with their deep knowledge of computers and finish up writing baffle-gab. There is no "computer jargon" language in this book. MicroSearch obviously went to school on their first effort, Version 1.1, then used just about every bit of feedback to construct a first-grade product.

Criticism

● Yes, for my money it does lack one thing. Why not on-screen rulers for measuring up placement of columns? The alternative is to measure up your sheet, and figure out the margins and gutters which, when entered into Preferences, become your formatted page. Setting up columns is still very easy, much easier than boxes, but I'd like to see MicroSearch add rulers like Page Stream has.

But, that apart, I now have everything I need for professional desktop publishing. I believe that the recommended retail price in Australia is about $280. Worth it! If you are serious about DTP don't hesitate!

PS: I ran a lengthy comparison between City Desk 2.0 and Professional Page. City Desk has a number of features in the graphic handling area such as the ease of cropping, ragged text flow around bitmap images and speed of placement which are considerably better. However, the main advantage - easy text editing - is easily achieved with Professional Page with the new version 1.3 and a Transcript. Furthermore, there are still many areas where Professional Page excels beyond any near competitor. A full review of the above mentioned two products will appear next month. As it stands now, I would still recommend Professional Page as the ultimate desktop publishing program for serious use - Andrew Farrell. ❑



Text wrap around

INTERACTIVE COMPUTER SYSTEMS*

1 Pope Street, Beverley, SA 5009
Phone (08)3472072

● AMIGA SCSI HARD DISKS
● CONTROLLERS from $408.00
Auto-booting with 13 K/s ROM
● AMIGA MEMORY BOARDS

SPECIAL

● INTERNAL MEMORY BOARD
suitable AMIGA 500
while stocks last $199.00

PROTON GROUP *

Hold on to your Genlock ...
a comparison of available models

by Peter Ward

A KEY FEATURE of the Amiga computer is the ability to transfer some rather remarkable graphics from the computer to a standard video format.

AS MANY READERS will be aware, there are currently three main video formats being used around the world at present. In Australia we use the Phase Alternating Line (PAL) system, as opposed to the American National Television Standards Committee (NTSC) and French Systeme Electronique Couleur Avec Memoire (SECAM) video formats. The first major hurdle in getting Amiga graphics to video is that none of these systems use the same format as used by the computer, or more correctly, by the High Resolution Colour monitor responsible for displaying those amazing graphics.

The exception being the Amiga 1000. Yes, it does have a colour composite video-out port, however, the quality of this output is best described as "low end". The Amiga High-Res monitor uses separate Red Blue and Green (RGB) colour (Chroma) and brightness (Luma or Intensity) video information from the computer to display its high quality image. Thus, the first hurdle for the budding Amiga videophile is to obtain a device which will accomplish this feat.

Getting graphics to video

● Broadly speaking there are two types of devices which can transform Amiga graphics to video. Encoders and Genlock/Encoders.

An encoder combines RGB information with vertical and horizontal blanking and synchronization pulses and produces "composite video". The Commodore A520 modulator is such a device, with the price tag reflecting the quality.

On the other hand a generator locking device (Genlock) for the Amiga without going into too much detail, locks or synchronizes the different sync pulses from two different video sources so that they are in effect "in phase" with one another. Thus, by firstly encoding the Amiga video signal, then locking the two synchronizing generator signals or sync pulses, a genlock can combine two different video sources, and hence allow Amiga graphics to be superimposed onto a background video picture (or vice versa). The task of the genlock/encoder is a difficult one.

Firstly, it must encode the RGB output from the Amiga without too much loss of quality, despite the fact that the bandwidth of the output signal is being reduced. Secondly it must be able to switch very rapidly from the incoming video signal to the encoded Amiga signal to achieve the overlay effect without degrading the live video being fed in.

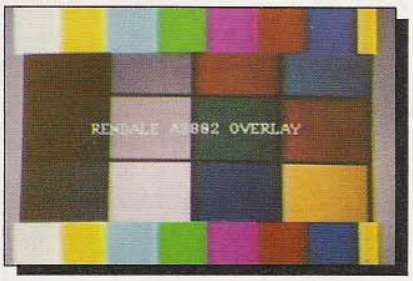
Setting the test

● With these thoughts in mind we set about testing several Genlocks now available for PAL system usage. The units tested were the Minigen, Ausgen, Rendale A8802, Neriki Desktop and the Professional Rendale 8806.

Unfortunately both Rendale units arrived a little late - after testing of the other three units had been completed in an editing suite.

To be fair not all testing conditions were precisely identical, however general conclusions should still be valid. The ideal way in which to test all of these units would have been to have examined studio test signal fed through the Genlocks and compared outputs on a waveform monitor and vectorscope.

We are talking very big bucks to hire such equipment, so a compromise solution had to be reached. To test the Genlocks the following procedure was adopted. Firstly the purely encoded image was examined for saturation and contrast using SMPTE colour bars displayed via the composite video-in port of an Amiga 1084 monitor. Modified Colour bars then were overlaid onto a colour test card image obtained from a Super VHS camera and then compared.



Rendale A8802 overlay

Minigen overlay

Ausgen overlay

Neriki overlay

The overlaid signal was copied onto Super-VHS video tape, as well as standard VHS tape to examine the results of a first generation copy, and the limitations imposed by the "home recording" process. This first generation tape was then copied twice to examine how well the encoder section of the Genlock stood up under marginal conditions.

Minigen

● The smallest and least expensive unit tested was the Minigen made by Applied Systems Developments Ltd. The Minigen is supplied with a manual and software. The unit is simply installed by plugging it directly into the RGB port of the Amiga. Attach video in and video out cables via the RCA connectors at the back of the unit, and the process is complete.

Control of the Genlock is via a three position switch, which allows: Amiga graphics only, video only or combined outputs. The Minigen does not need an external sync signal for the encoder to work, as a matter of fact, even when grossly unstable external sync is applied, the Minigen has a "rock steady" overlay, which goes on displaying Amiga graphics with no "tearing" no matter what the background video signal is doing. Frankly, I was a little suspicious of this remarkable tracking, or more precisely, sync actually being being applied by the genlock. Closer examination of what was going on revealed a loss in contrast of the in-coming video.

Without a waveform monitor and vectorscope it is difficult to say for sure that the incoming video was not being resynced or degraded, however, there was definite "leaking" of background video through to the foreground Amiga graphics with the Minigen. The encoded colour bars also showed vertical bands where solid areas of colour should have been seen.

Cross-Colour, a "rainbow" like effect areas of high contrast was also seen, however, the MiniGen was not alone here! Saturation of the encoded and overlaid colour bars was good, and the Minigen stood up well to first through to third generation video tape copies, with the encoded colours being well saturated in all cases. For the home user, the MiniGen represents excellent value for money.

Ausgen

● The second Genlock tested was the AusGen (already previewed in this magazine, January 1989). The unit tested is the current and only model being supplied by AusGen, and like the MiniGen is extremely simple to install. The AusGen is supplied with a comprehensive manual, RGB cable, external power supply and software.

Connectors used by the AusGen are the BNC type, which give a better connection and shielding, and are less prone to coming loose when compared to RCA connectors. The AusGen plugs into the RGB port of the Amiga, and also has a RGB "pass through" cable which allows monitoring of the Amiga's graphics independently of the incoming video. Video in and out ports were connected, power supplied and the unit was up and running.

The AusGen requires an external sync source to function. Simply put, the Amiga would not boot without it, however this is mentioned in the manual. The encoded colour bars were extremely good with the AusGen, no banding was visible in areas of solid colour. Depending upon the quality of the

external sync source the degree of cross-colour was variable, the better the source, the less the effect.

There was very little to no leaking from background video to foreground graphics using the AusGen, in fact, regardless of price it was one of the best units tested in this aspect. There was no loss of contrast in the external video. The AusGen had a slight loss in the saturation of overlaid colours using a live video source.

First generation VHS and Super VHS tapes were of good quality, but by the third generation the AusGen colour bars were decidedly subdued. An aspect where the AusGen particularly went astray was tracking of the overlay, when using a tape as the video source. Any instability in the external video was faithfully reproduced in the overlay using the AusGen. Overall the performance of this unit was suitable for the high end home user or semi-professional.

Neriki

● The next unit tested was the Neriki Desktop. The Neriki is supplied with a demonstration disk, concise manual, and RGB cable. In addition to RGB and video in and out ports, the Neriki also has a loop out and RGB monitor connector. Video connectors on the Neriki were also of the BNC type, again with the stated advantages.

Installation is relatively straightforward. Connect the RGB cable from the Amiga to the genlock, connect video in and out cables, and plug in the power cable.

External sync has to be applied to the Neriki, however this can be removed once the unit is up and running. The Neriki Desktop was the only unit tested with a "fader " control, a highly desirable feature which allows a gradual dissolve (in or out) from background video to foreground Amiga graphics.

The encoded colour bars of the Neriki had excellent saturation, in fact if anything, they were a little "hot". No banding was visible in solid areas of colour, clearly a good encoder section was installed. Cross-colour was also seen in encoded areas of high contrast using the Neriki. The overlay using a live video source had extremely well saturated colour bars, and again were a little on the "hot" side.

There was very little leaking from background video to foreground graphics. The taped colour bar overlay from the Neriki was excellent from first through to third generation copies, with the "hot" colours at the live video stage being an asset by the third generation on tape.

Degradation of the encoded signal was clearly on a par with what was happening to the tape itself on multiple generation copies. A better result could not have been expected. There was little or no instability with tracking external taped video using the Neriki, with the unit performing well with both good, and not so good taped material.

The Neriki Desktop performed very well in all aspects, both price and performance place it in the semi-pro to professional range.

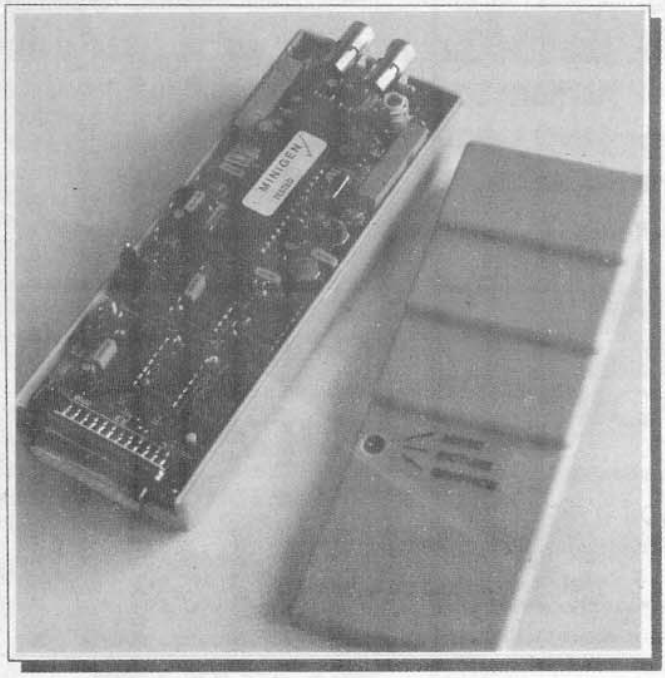
Rendale

● The last two Genlocks tested were manufactured by Rendale, however they arrived after testing on the first three was completed. While I was able to obtain some of the equipment used in the testing of the first three units, multiple generation Super VHS/VHS copies could not be made and a Sony Video-8 colour camera was used in place of a JVC Super-VHS camera.

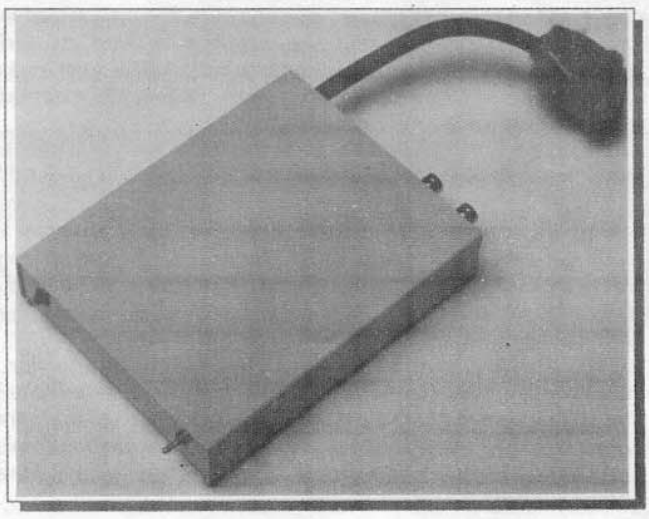
The Rendale A8802 is supplied with a manual, software and a 25 Pin "D" connector. Reading the manual revealed that a control cable has to be made by the owner, before the Genlock can fully function. There are no external switches on the Rendale, all controls are performed with software.

A quick trip to Dick Smith's for the relevant control cable parts, and the unit was soon up and running. The Rendale also uses BNC connectors and draws power directly from the Amiga. The genlock did not not require external sync to function, and could be used as a straight encoder. The encoded colour bars were on a par with the Minigen, vertical bands in solid areas of colour, and cross-colour was also apparent in areas of high contrast.

Saturation however, was good. The overlaid colour bars also had good saturation, though leaking from background



Minigen



Ausgen

Over One Million Amiga computers have been sold worldwide.

As an exciting component in a child's education, Amiga is a sound investment.

Why not give your children the educational advantage?

In fact, the Amiga 500 and the Amiga 2000 are two of the most advanced educational computers available.

Their features include the ability to expand as far as a child's willingness to learn.

A huge software base that's constantly growing to keep pace with the latest in technology and knowledge.

Plus a whole range of other uses including graphics, animation and synthesized sound.

If you're clever enough to buy an Amiga computer, imagine the boost it will give your child's education.

Commodore

JSA COM 0424

tion, though leaking from background video to foreground overlay was present. The A8802 showed no signs of degrading the incoming video and tracked both VCR and Camera video sources very well, with little instability in the overlay. The taped output from the unit was good on first generation copies using both Super VHS and Standard VHS formats.

A rather nice feature of the A8802 was the ability to select a colour, other than Amiga colour zero, which could be treated as transparent. Overall this unit would be best suited to the high-end home or semi-professional user.

The last unit tested was the Rendale A8806. The several thousand dollar price tag was also matched by a very large case, which is designed to be placed under an Amiga 2000/2500. The unit is supplied with a control cable, RGB cable and software, including a comprehensive "DOCS" file, plus a few pages of printed instructions.

The unit uses the A2000/2500 power plug, and supplies power directly to the A2000/2500 on sensing that the Amiga is switched on. With appropriate cables, the A8806 can also be made to work on the A500, with power coming from the computer. External sync was not necessary for the unit to function, indeed, a high quality internal sync generator is fitted to the A8806.

Aimed squarely at the professional market, the A8806 was the most fully featured unit tested, with connectors for Key Out, Sync Out, separate "RGB" and "I" connectors. Studio blanking and RGB monitor connectors are also fitted.The encoded colour bars were by far the best of any unit tested. Contrast saturation and hue were all great. No vertical banding was seen in areas of solid colour with virtually no cross-colour in high contrast areas.

Colours other than Amiga colour zero could be treated as transparent by the A8806. The A8806 also has a mix select button which gives either a composite or RGB mix. With RGB selected, full bandwidth Amiga graphics with a video background can be ported to the Amiga monitor (or studio encoder), the resulting image has absolutely no dot crawl, cross-colour or loss of detail in the Amiga graphics (though eventually some would have to be accepted after encoding).

To allow perfect centering of the Amiga overlay, a horizontal phasing control is also fitted. When composite mixing was used, there was slight leaking from background video to foreground Amiga graphics. The overlaid colour bars were well saturated with good contrast. Using an RGB mix, there was a drop in Chroma on the incoming video.

First generation tape copies in both VHS and Super-VHS were excellent, though it would have been good to have seen a separate Y/C connector fitted to take full advantage of the Super-VHS format in a high end unit such as this. Another disappointment was the lack of a "fader", though, I gather this unit is intended to be used with a studio switcher making such an option redundant.

In short, the Rendale A8806 has professional features with performance to match.

Ratings

● In an effort to summarize the performance of the genlocks tested, a rating table was constructed, with most items being self explanatory. "VIDEO thru QUAL'T", refers to loss in quality/ contrast of the incoming video when compared to the genlocked video signal, when an Amiga overlay is applied. None of the units tested was a real "lemon" and in numerous cases differences noted were to be expected from the pricing. Overall, the Neriki Desktop comes out "best on points" with features, performance and price all considered. The best performer on an unlimited budget was the Rendale A8806, and for the home budget the Ausgen is hard to go past.

Many people need to be thanked for their assistance in supplying either their equipment or advice or both in making this review actually happen. David Thompson, maker of the AusGen, for his technical advice and Genlock. Thanks to Tom Quealey of the Computer Spot retail chain in Sydney for supplying a MiniGen for testing. Cindy Wong of Computamart on the West Coast, for shipping the Rendale Units over to us here on the East Coast. (I really did not want to ship the professional Rendale back to Cindy). Mario Nicotra for his helpful prompting and John Barnard for the use of his editing suite. Lastly, my wife for putting up with VCR's, video cables, cameras, Genlocks and computers all over the house for the week it took to test all of this equipment.

Computer Spot (02) 419 2333, Computa Mart (09) 328 9799, Ausgen (02) 639 6686, Neriki (02) 488 7133.

Super VHS is amazingly superior in quality to standard VHS. With 400 horizontal lines of resolution, and super crisp colours the improvements are immediately obvious, even on a standard colour television. We tested out the JVC HR-S5000EA player and GR-S77 camera together with the Neriki Desktop Genlock.

Although we had some difficulty getting the right combination of cables, we eventually managed to achieve some excellent results. The system enables very smooth edits thanks to a flying erase head. You can also dub audio tracks onto your edited video at a later stage. The Upser VHS resolution is ideal for work with the Amiga, which is able to reach comparable resolutions.

Although time did not permit an in depth evaluation - we could positively say you would be very happy with the JVC system. It has many versatile features, and produces good results. Pnly criticisms would have to be the manuals - which are incredibly difficult for the non-technical minded to follow. Video buffs will feel right at home. The S-VHS camera features 8 x zoom, direct play back, digital superimpose, auto or manual white balance and focusing, multiple speed shutter, 10 lux sensitivity, quick review, zero frame editing and a lot more.

For the ultimate player, the S5000 boasts some very sharp lines,a flip down control panel concealing a mass of ergenomic buttons and selectors. Features include Hi-Fi sound, fly erase heads, long play mode, dead perfect frame by frame advance, variable speed search, tape indexing for fast location of prerecorded sequences and all the usual timer features. RRP $2299.

Thank you to JVC's local distributor, Hagemeyer for loan of the above equipment.

	Minigen	Ausgen	Neriki	A8802	A8806
External power	no	yes	yes	no	yes
BNC connectors	no	yes	yes	yes	yes
External switching	yes	yes	yes	no	yes
Software control	no	no	no	yes	yes
RGB pass thru	no	yes	yes	no	yes
Fader	no	no	yes	no	no
Encoder saturation	good	v.good	v.good	good	excellent
Cross-colour	average	good	v.good	average	excellent
Background leaking	average	excellent	v.good	average	v.good
VCR tracking	excellent	average	v.good	v.good	v.good
Video thru quality	average	v.good	v.good	v.good	excellent
1st gen tape	good	good	v.good	good	excellent
3rd gen tape	good	average	excellent	n/a	n/a
Approx price	$400	$550	$1100	$900	$3200

AMIGA ACCESSORIES

MEGASLIM 3½" Floppy Disk Drive

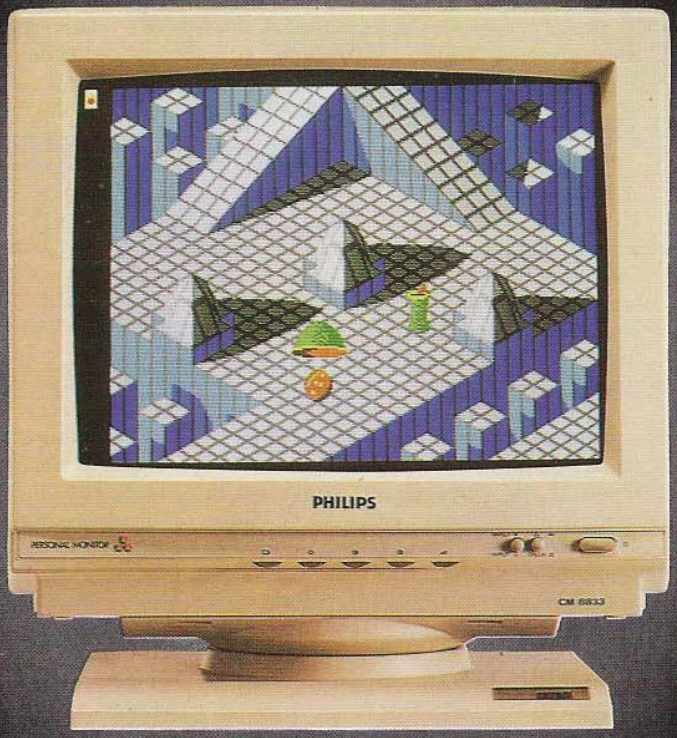
For Commodore Amiga 500/1000/2000

- Slim, one-inch high design
- Simplified mechanism
- Long life, reliable brushless direct drive motor
- Low power consumption
- Connects direct to computer — no power adapter required
- Fitted with 23 pin D-Series socket for additional drives connection
- On-Off switch
- One year warranty

PHILIPS MONITOR

CM 8833 14" CVBS and RGB colour monitor

- IBM PC compatible (CGA)
- fastblanking to enable superimposing
- stereo audio
- earphone socket
- resolution: horizontal 600 dots x 285 lines vertical
- optional: pedestal 'tilt and turn'



SUITABLE FOR:
AMIGA 500/1000
COMMODORE 64
ATARI ST
IBM (CGA)
NINTENDO
SEGA
HOME VIDEO
(Pedestal and some leads are optional)

STEREO

DISTRIBUTED BY:

HOME ENTERTAINMENT SUPPLIERS PTY LTD

UNIT 1/128 BONDS RD, RIVERWOOD NSW, 2210 PH: (02) 533 3679 FAX: (02) 534 6421

Let's go to 'Warpspeed'

by David Fong

Another speed up cartridge? For a change C128ers are looked after too! Read on.

COMMODORE 128 USERS are no doubt painfully aware that whilst C128 programs load with blinding speed in 128 mode, the majority of C64 programs dribble into the computer at an excruciatingly slow rate. The same Commodore 128 owners know that most 'fast load' cartridges are quite incompatible with the C128, tempting fate by demanding that the user pull the cartridge out and in again every time the Commodore 128 owner wants to enjoy the benefit of a different mode. Meanwhile, many Commodore 64 owners simply want a good fast load cartridge, blissfully unaware of the Commodore 128 owner's plight.

I am happy to report that a cartridge has been released that satisfies the requirements of all Commodore 8-bit computer owners in the form of Cinemaware's first hardware release, Warpspeed.

Better known for their interactive software movies, Cinemaware have produced an impressive product for those who want a fast loader and utility cartilage.

What makes this cartridge stand apart is its compatibility with the Commodore 128 mode, 1571 and 1581 disk drives. A simple switch on the cartridge allows the Commodore 128 owner to change modes (no more holding down the Commodore key!), and a reset button is also thoughtfully provided for Commodore 64 owners who do not have one.

Warpspeed will not 'freeze' programs, and hence will be of little illicit value to all those pirates out there. However, those of us who use our computer in more legitimate ways will find no shortage of features. The 17 page manual appears daunting for a fast load cartridge, but a few moments in a comfortable chair soon sorts things out. For those not so patient, the cartridge can be simply plugged in and the benefits of faster loading reaped.

I have conducted the following tests myself on a Commodore 128D (1571 disk drive with revision 05 ROMS). Of course, '64' tests are in 64 mode with the 1571 drive in 1541 mode.

Immediately apparent are the faster load times, up to 6 times as fast as a stock 1541. Unlike some other cartridges, Warpspeed is no slouch when it comes to saving program files, and again there is an improvement over the stock 1541. Formatting, verification and copies are all done at turbo speed. Unfortunately, scratching and validating are done at the normal speed.

The real surprise lies in wait only for those who read the manual (or, alternatively, those who stumble upon it by chance). Warpspeed saves all programs in a 'skew 6' format, which allows programs to be loaded faster yet again. In case you are worried, a stock 1541 can still read 'skew 6' format at the normal speed. Some copiers (such as Renegade) and Warpspeed's own copier allow copying of files in 'skew 6' format, allowing some commercial programs with light copy protection to be completely converted to 'skew 6' format.

However, Warpspeed still has a few tricks up its sleeve. Included in both C64 and 128 modes is a wonderful menu driven utility. Standard operations include file copy, maintenance and execution of programs. All these functions are menu driven and are as 'user friendly' as they can get without the use of mice. More fascinating is the provision of an integrated sector editor and machine code monitor. Besides altering disk contents, the sector editor can 'trace' a file as it wanders through the disk.

Screen dump capability is also provided. The machine code monitor works both with drive memory and computer memory, and has the familiar functions present in most machine code monitors. Unlike the Commodore 128 inbuilt monitor, the Warpspeed monitor allows scrolling up and down through the assembler/data in memory, a very useful feature.

Many of Warpspeed's menu-accessible functions are also available in direct mode. These include disk command wedges, 'unnew' BASIC programs and 'killing' the fast load aspect of Warpspeed. For those who use their computers in front of Apple II users, there is an 'auto menu', which allows programs to be executed from a cursor operated menu. Commodore 64 owners can also execute the first program on the disk by pressing commodore key and run stop simultaneously, similar to 'shift run-stop' available to 128 owners.

Warpspeed is a reliable product (the current version is not 1.0) which I have never needed to take out of the expansion slot. It has made the use of many programs bearable and quick. It lacks some features found in more expensive cartridges, such as function key definitions and extra BASIC utilities.

However, I can only recommend Warpspeed as the best fast-load cartridge for the Commodore 128 owner, and a very healthy contender for the hearts and minds of Commodore 64 owners as well.

Times are identical with skew 6 and skew 10 (normal) format for the 128. Note that *Guderian* carries no copy protection at all. *Europe Ablaze* does have copy protection. I have also tried Warpspeed successfully with *Fontmaster 128* and *Power C. Power C 128* does not save properly with Warpspeed, though *Power C 64* works very well indeed with Warpspeed.

Review copy from Mindscape (02) 899 2277. RRP $59.95. ❑

	Guderian (3 parts)	Europe Ablaze (4 parts)	127 block file
Normal 64			
Load	116 seconds	362 seconds	81 seconds
Save			83 seconds
64 Warpspeed			
Load	31 seconds	118 seconds	12 seconds
Save			10 seconds
64 Warpspeed skew 6 format			
Load	27 seconds	98 seconds	12 seconds
Save			10 seconds
128 with 1571 drive			
Load			8 seconds
Save			61 seconds
128 Warpspeed with 1571 drive			
Load			10 seconds
Save			10 seconds

Be a Wise Man this Christmas
with
Fabulous Presents from Pactronics

1. VIDEO WIZARD (C64, PC, AMIGA and ST)
Get your video tapes into order in the Christmas break with this great programme that catalogues your tapes, and the time left on each tape. You can also design titles for your video tapes.

2. BUSINESS CARD MAKER (C64, AMIGA, PC and ST)
Perfect for small business, or individuals, allows you to incorporate graphics onto the business card blanks supplied.

3. BUMPER STICKER MAKER (AMIGA, PC and ST)
Display your verbal masterpieces on the self-adhesive vinyl blanks and produce your own bumper stickers. Great fun for all the family.

4. WHAT A GREAT XMOUSE PRESENT!
We have superbly engineered mice for the C64 - M1 and M3; for the Amiga - M4; and for the PC - GM6 and GFM301- specially priced for Christmas, the M1 is only $49.95 and the GM6 $79.95. (We have limited stocks left of the superb NEOS/GEOS mouse.)

5. GREAT GIFTS FOR THE KIDS - AND EDUCATIONAL TOO -
GRANDMA'S HOUSE, TREASURE ISLAND, ALICE IN WONDERLAND, SWISS FAMILY ROBINSON, FUNSCHOOL 2 to name but a few of the superb Pactronics range of products.

6. BOOK YOURSELF (OR A FRIEND) A VERY MERRY, LITERERRY CHRISTMAS!
With one of Pactronics' super range of Amiga and PC reference books for all levels from beginners to advanced - from Dymocks, Collins Book Stores, and all other leading book stores.

7. WHY NOT TREAT YOURSELF TO A DISK DRIVE FOR YOUR C64 THIS YEAR.
After all, you're the most important person in your life. Give up on that dreary, time-consuming datasette with the ever decreasing range of available software and get the best engineered disk drive available - the **PACTRONICS BCD5.25**.

8. SPORTS LOVERS
PACTRONICS has many sports games for your COMMODORE and AMIGA, including **FLIGHT SIMULATIONS, RACING SIMULATIONS, AFRICAN RAIDERS, GRAND PRIX, SKATEROCK** and the brilliant new **SKATE OF THE ART** for your AMIGA.

PACTRONICS CHRISTMAS PRESENT TO YOU

BUY ANY OF THE ABOVEMENTIONED PRODUCTS, SEND IN A COPY OF YOUR YOUR RECEIPT WITH THE WARRANTY CARD ADDRESSED TO: CHRISTMAS PRESENT, C/- PACTRONICS, PO BOX 101, RYDALMERE, NSW 2116 - AND RECEIVE A FREE GIFT FOR YOU AND YOUR COMPUTER (PLEASE STIPULATE EXACTLY WHICH MODEL COMPUTER YOU OWN.

SPECIAL ANNOUNCEMENT! ! !
WE HAVE JUST RECEIVED STOCK OF THE BRILLIANT **CHRISTMAS COLLECTION** ON C64 DISK AND TAPE. BEAUTIFULLY PACKAGED FOR THE YULETIDE SEASON, THESE ARE A MUST FOR ANY CHRISTMAS STOCKING.

Pactronics

N.S.W. : Pactronics Pty Ltd, 98 Carnarvon Street, Silverwater, (02) 748 4700
VICTORIA : Pactronics Pty Ltd, 51-55 Johnston Street, Fitzroy. (03) 419 4644
QUEENSLAND : Pactronics Pty Ltd, 12 Stratton St, Newstead, 4006. (07) 854 1982
SOUTH AUSTRALIA: Contact NSW or Victoria office
WESTERN AUSTRALIA: Pactronics, unit 13, 133 High Rd Willeton 6155. (09) 354 1122
NEW ZEALAND: Micro Dealer NZ Ltd, PO Box 23-678, Papatoetoe, Auckland. (09) 274 9300

Digitising with Perfect Sound

Imagine being able to place practically any noise into your Amiga as a file and being able to vary the speed of the record and playback and even to play it back in reverse!

PERFECT SOUND MAKES IT all possible. A small box plugs into the printer port and the two plugs on the back accept the left and right channels of your input device using standard RCA type connectors. I used my old ghetto-blaster with the Amiga and it works fine both ways.

The program is loaded and commences with a excellent demonstration of its capabilities. The menu choices are vast, allowing you to copy, split from stereo to mono and even to combine two separate pieces into one stereo composition. Files can be appended, linked, deleted, loaded, and all the other usual facilities are supported.

Recording

● Recording is as simple as selecting 'record' after setting the record speed of course, and when you press the mouse button that's it! As soon as the memory is exhausted or the music finishes, it is captured and ready for use.

The memory can hold only short pieces (less than 30 secs) but this can be extended slightly by using 'mono' mode and slowing down the sampling speed, at the expense of sound quality. The higher the sampling rate, the better the recording, that is the rule, unfortunately, at the highest sampling speed there is but a few seconds to capture the sound.

I'm sure that as technology advances, there will be big improvements in sampler equipment. This is not a criticism of *Perfect Sound*, merely pointing out that sampling and digitising sound is a memory expensive business and the fact that it is possible on your 'average' home computer is a remarkable achievement on its own.

The fun things which are possible with *Perfect Sound* are endless. I recorded my 11 year old son reciting some poetry and played it back slower - I said that he would sound like that when he was 18. He was not impressed because he sounded like Dave, of Dad and Dave, although I very nearly had hysterics at the sound of it. Other projects were the recording of such diverse artists as Jimi Hendrix, Steppenwolf, Ian Dury, J.J.Cale, Spy Vs Spy and others, all with excellent results.

A particularly interesting one was the start of *Born to be Wild* played in reverse. A local Harley Davidson owner was quite impressed with the Harley sound in reverse until I told him it was backwards!

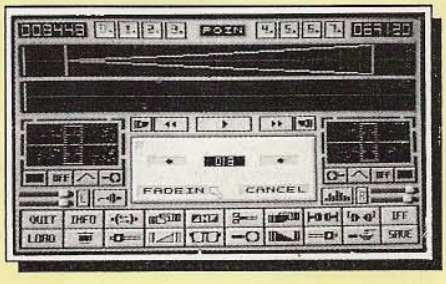
Other fun things to do were the changing of sound tracks on various disks (back-ups of course). Not all of them worked but *Offshore Racer* sounded good with Steppenwolf playing on the intro screen (that's about the only good thing about *Offshore Racer*). My own voice said "Well, Bill, what about this then?" on the startup of a disk given to my old pal Bandaide Bill.

Criticisms

● I had a lot of fun with *Perfect Sound* but as usual there were a couple of minor criticisms. One is the fact that your printer is disabled while the cartridge is in place. Possibly *Perfect Sound II* will have a pass-through plug. The other criticism (also very minor) is that the files take up a lot of disk space. Only three files can be stored on a disk in un-compacted form, so I found myself rapidly running out of blank disk space.

There is a compacting option which saves space but the files are then unsuitable for use with the usual music player programs. Good points outweighed the bad points though, with *Perfect Sound* being an excellent introduction to sound digitising. Priced at around $200 it is a fairly expensive item but the fun that can be had with it lasts for a lot longer than $200 does. *Perfect Sound* from Sunrize Industries is available from most large computer outlets.

Available from Computermate Products (02) 457 8118, RRP $189. ❑



A sound sampler

Look out for

AMIGA ANNUAL 1990 !

Produced by the editorial staff of *Australian Commodore and Amiga Review*

On sale in newsagents and computer dealers NOW

☆ Complete up to date list of software available in Australia with description, price, availability, etc

☆ User Group List

☆ Fish Disk List

☆ Product reviews

☆ Desktop Video

☆ And lots more !

GREAT CHRISTMAS GIFT !

EXPERIENCE

THE

POWER

In our previous ads you saw the great comments that versions 1, 2 and 3 of SUPER SNAPSHOT received from various North American reviewers. And with V4 it was more of the same except the comments took on an international tone. For example....

"...a joy to work with. ....I highly recommend it."
Eric Hoyroyd. Sept., 1989
Australian Commodore and Amiga Review

"I personally liked the facilities that Super Snapshot gave me, and will no doubt use it regularly."
S Garton. April 1989
YOUR COMMODORE (England)

"This cartridge just keeps getting better with every release. There's nothing else that can even touch it."
INFO March April 1989

We were happy to receive such acclaim; but YOU wanted more. So much more that the memory required far exceeded any of the current cartridges available.

To us at LMS, the solution was obvious...we had to double the memory of our cartridge. This meant a whole new hardware design. That's right, SUPER SNAPSHOT now contains an incredible 64K rom and 8K ram combination. NO OTHER CARTRIDGE IN THE WORLD OFFERS THIS MUCH POWER!

Buying 2 or 3 competitive cartridges would still not give you all of the features listed on the right!

SUPER SNAPSHOT SLIDESHOW CREATOR PLUS

Our popular SLIDESHOW CREATOR has also been enhanced! Many new features make this utility even more versatile and fun. Add new fonts by using the font files captured using our CHARACTER SET MONITOR. There are also more display effects, an editor screen and you can even add sound to your custom slide-shows! The sound can be files generated by our SOUND SAMPLE MONITOR, any of the popular sid player files or you can even convert Amiga IFF files into 64 format! Menu driven and easy to use.

Super Snapshot V5 – $119.00
Slideshow Creator Plus
– only $39.95

SUPER SNAPSHOT V5 FEATURES:

▶ All features available at the press of a button ▶ Works with all 64 (C) and 128 (D) ▶ Compatible with 1700 64 50 REU ▶ Archive any memory resident program into 1 file ▶ Save 7x faster and load 15x faster on the 1541, 71 and 81. Speeds of up to 25x faster when using TURBO'25 ▶ Super DOS wedge ▶ GAME MASTER menu with sprite killer, infinite lives generator and joystick port swapper ▶ Programmable function keys ▶ Sprite monitor ▶ Character set monitor ▶ Boot sector support ▶ Sound sample monitor ▶ 300 1200 2400 terminal program (40 80 column) ▶ SUPER DISK SNAPSHOT - our new super nibbler ▶ SCREEN-COPY now loads or saves from to disk in more graphic formats and dumps to printer in 16 gray scales or COLOR with the Star Rainbow or Epson JX-80 ▶ Improved full featured m l monitor that DOES NOT CORRUPT MEMORY. Interrupt, examine and resume any running program ▶ Drive mon ▶ BASIC PLUS with 15 new basic commands ▶ File Management System - scratch, unscratch, rename or adjust skew. Includes our 1 or 2 drive file copier with partition support for the 1581 ▶ Fast disk copiers, 1 or 2 drives ▶ OUR FILE COPIER, DISK COPIERS and NIBBLER MAKE FULL USE OF THE REU's ▶ Sequential file reader ▶ 24 hr. BBS support ▶ Utility disk ▶ Plus **much** more including 150+ free Kracker Jax parameters

SUPER SNAPSHOT V5...the most powerful utility ever developed for the 64.

AVAILABLE NOW FROM SELECTED COMMODORE/AMIGA DEALERS.

DISTRIBUTED IN AUSTRALIA AND NEW ZEALAND BY:

COMPUTERMATE
products (australia) pty. ltd.

9 HIGH STREET, MT. KURING-GAI, N.S.W. 2080
TELEPHONE: (02) 457 8118 FAX: (02) 457 8739

LMS TECHNOLOGIES

MADE IN CANADA

Entertaining Australasia.

ECP

FANTASTIC CHRISTMAS OFFER

IBM PAK

OR

CHUCK YEAGER

OR

CAVEMAN UGH

OR

688 ATTACK

plus BONUS

SB 100L

C64 DISK & CASSETTE PAK

CAVEMAN UGH

CAVEMAN

AMIGA PAK

WORLD TOUR GOLF

OR

INTERCEPTOR

OR

POPULOUS

plus BONUS

SB 40L

GLOBAL TREK
C64
CASSETTE & DISK
AMIGA
OR
OR
CHUCK YEAGER
plus
BONUS
SKATE OR DIE
JS 100C
FANTASTIC ZOOMER JOYSTICK
EA SUPA PAK
C64
CASSETTE OR DISK
EA SUPA PAK
1990 AMIGA PAK
1990 AMIGA PAK
5 GAMES 4 DISKS
BEJAL
ALPHA 1
PALLE
VOYAGER 1
INVASION
Available at all leading Computer Stores

Using Sprites

by Brendan Burns

If there are any basic programmers out there who have wanted to move into the world of graphics but have never quite known how, maybe this is the solution to your problems - SPRITES!

SPRITES ARE SIMPLY high resolution programmable objects, the size of about nine ordinary text characters. They can be moved about the screen, changed colour, expanded to up to twice their normal size, and called upon the screen in a fraction of a second. You can put up to eight different sprites on the screen at once, single colour or multi-colour, and detect collisions between them.

Everything about the sprites is controlled by the VIC chip (VIC is short for Video Interface Chip), so to produce a sprite you have to poke all its details into the locations of that chip.

Well, enough about what sprites are and what they can do. Now I'll show you how to program them.

To start, you have to design yourself a sprite. Draw a grid as shown below, or use it if you like. Each square in that grid represents one pixel, or one dot on the screen, and can be turned either on or off.

See figure 1 below.

I have done a simple sprite design of the Commodore symbol as an example:

See figure 2 below.

On your grid draw a design, filling in each square you want to be shown. Once you have finished designing your sprite, you now have to poke your design into the VIC chip. To do this you add up the bit values in each byte, and put them into data statements. In simpler terms, you add up the numbers this way:

Each space on the grid takes up one bit of memory. Eight bits equal one byte. If you look up the top of your grid, every eight numbers contains this number sequence:

128, 64, 32, 16, 8, 4, 2, 1.

These are the bit data values, and they have to be added together to form each BYTE data value. So, what you do is look at each eight number and add up each bit data value that is used in design. For example, if one line of eight numbers (or BYTE) looked like this:

. x . x . x x x

Then this is how you would add it up:

128 64 32 16 8 4 2 1 (BIT data values)
= 64+ 16+ 4+ 2+ 1
= 64+ 16+ 4+ 2+ 1= 87= BYTE data value

You then do this for every BYTE of numbers in the grid, starting at the top left hand corner and moving left to right across the grid until getting to the bottom right hand corner of the grid. When you have finished, put an extra zero at the end of your data values.

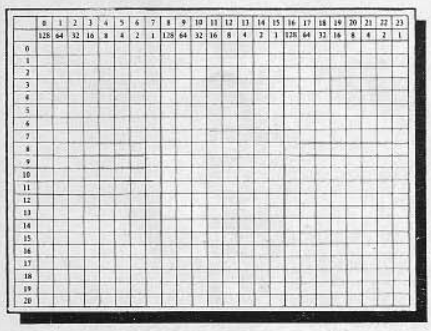


Figure 1

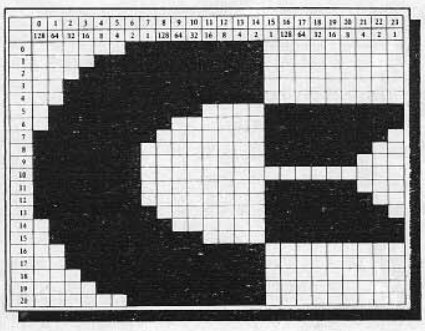


Figure 2

This is because altogether there are only 63 data values, and 63 isn't a very convenient number for the computer to work with. So, a 64th number has to be added on the end, which doesn't specify anything, and is set to zero. To poke the BYTE data values into memory, you use a loop such as the one used in this program.

This sprite is stored in an area of memory from location 832 onwards. There is room for up to three sprites in this area of memory, starting at locations 832, 896, and 960.

The data values already written in this program just produce the Commodore symbol shown before. To produce your own design, just type in your data values instead of these ones (Don't forget the extra zero!!). Anyway, type in and run this program:

```
10 FOR A=0 TO 63
20 READ BYTE
30 POKE 832+A,BYTE
40 NEXT A
120 DATA 3,254,0,15,254,0,31,254,0,63
130 DATA 254,0,63,254,0,127,225,255,
127
140 DATA 129,255,255,1,254,254,1,252
150 DATA 254,1,248,254,0,0,254,1,248
160 DATA 254,1,252,255,1,254,127,129
170 DATA 255,127,255,225,63,254,0,63
180 DATA 254,0,31,254,0,15,254,0,3,254
190 DATA 0,0
```

Nothing happens, right? Wrong! You have now poked all your data values for the sprite into memory, and the sprite is now ready to be called up on the screen.

Here is the rest of the program which will display the sprite on the screen. Type in and run with the last program:

```
50 PRINT CHR$(147)
60 POKE 2040,13
70 POKE 53287,7
80 POKE 53248,180:POKE 53249,80
90 POKE 53264,0
100 POKE53269,1
110 POKE 53271,1:POKE 53277,1
```

This time you should see the sprite appear on the screen in a yellow colour. If

(continued on page 30)

Fabulous Christmas Presents from Pactronics

There is no better gift than one which gives many hours/days/months of enjoyment - insist on Pactronics great games

1. THE CHAMP C64 and AMIGA
The definitive boxing programme recognised by the W.B.C. with "ROCKY" theme music.

2. TURBO CUP (AMIGA, PC and ST)
Two presents for the price of one! You get one of the best rally games ever written and a superb model **PORSCHE** with opening doors, turning wheels, etc. You could not find a more stunning gift than this.

3. BUDGET BLASTERS (C64 TAPE)
Don't just give one cassette - give them 4 brilliant games in each BUDGET BLASTERS pack. Unbelievable value at $19.95.

4. TERROR (C64)
Despite the title, this is great fun for all the family - but don't play late on Christmas Eve!

5. IS YOUR FRIEND A GAMBLER?
Then he'll love **JOKER POKER** (C64D, AMIGA and PC) ***OR*** **THE ULTIMATE CASINO GAMBLING SIMULATION** (C64, AMIGA and PC) ***OR*** **CARD SHARK** (C64D) ***OR*** **VIDEO VEGAS OR** even **ADULT POKER** (C64D and AMIGA), and if he's only a small punter, then get him **THE GAMBLER** (C64D) for only $7.95.

6. GARFIELD FREAKS ! ! !
If you love GARFIELD and his mates, you will love our two programmes - **A BIG, FAT HAIRY DEAL** (C64D and AMIGA) AND/OR **WINTER'S TAIL** (C64 disk and tape, AMIGA and ST).

7. SNOOPY FREAKS ! ! !
Yes, the beloved **SNOOPY** - the cool computer game is here with good old **CHARLIE BROWN and the rest of the PEANUTS GANG**. (AMIGA and ST)

8. ARCADE FREAKS ! ! !
TAITO'S DARIUS is now available on AMIGA and ST. Unbelievable arcade action in your own home.

SCI-FI ENTHUSIASTS JUST LISTEN TO THESE TITLES !
SOLDIER OF LIGHT (AMIGA); **ALIEN SYNDROME** (C64 DISK & TAPE, AMIGA and ST); **SPACE RACER** (AMIGA); **QUADRALIEN** (AMIGA); **BLACK SHADOW** (AMIGA); **FOUNDATIONS WASTE** (AMIGA); **ROLL OUT** (AMIGA); **PIONEER PLAGUE** (AMIGA); **CAPTAIN POWER** (C64D); **MANDROID FILES** (C64); **DREAM WARRIOR** (C64) and **ALIEN DESTRUCTION SET** (C64)

ARE YOUR FRIENDS GREEDY?
Then buy them one of PACTRONICS' great compilations such as **ADVENTURES 1-12** (C-D); **MEGA PACK** or **PREMIER COLLECTION** for the AMIGA; **GRAPHICS ADVENTURES 1-6** for the C64; **MERCENARY COMPENDIUM** (COMMODORE and AMIGA); **4 SMASH HITS** or **CLASSIX** (COMMODORE DISK AND TAPE.

INSIST ON PACTRONICS PRODUCTS FOR VALUE AND QUALITY

Pactronics

N.S.W. : Pactronics Pty Ltd, 98 Carnarvon Street, Silverwater, (02) 748 4700
VICTORIA : Pactronics Pty Ltd, 51-55 Johnston Street, Fitzroy. (03) 419 4644
QUEENSLAND : Pactronics Pty Ltd, 12 Stratton St, Newstead, 4006. (07) 854 1982
SOUTH AUSTRALIA: Contact NSW or Victoria office.
WESTERN AUSTRALIA: Pactronics, unit 13, 133 High Rd Willeton 6155. (09) 354 1122
NEW ZEALAND: Micro Dealer NZ Ltd, PO Box 23-678, Papatoetoe, Auckland. (09) 274 9300

your sprite didn't turn out exactly how you wanted it, recheck your data values and see if you added up your BIT values correctly. If you do find a mistake, then just make the necessary changes to your data in the program.

You may be wondering what all those POKES in the second program do. Well, I'll explain them to you.

LINE 50: Clears the screen

LINE 60: Tells the computer the location that data starts at. Our sprite is stored in the 13th block of 64 bytes (13*64 = 832)

LINE 70: Sets the colour for the sprite. Our sprite is set to number seven, which is yellow, but you can change the number to whatever colour value you like.

LINE 80: Is the screen co-ordinates for where you want the sprite to appear on the screen. The horizontal co-ordinates are controlled by location 53248 for sprite zero, 53250 for sprite one, 53252 for sprite two, etc, going up in even numbers. The vertical co-ordinates are controlled by location 53249 for sprite zero, 53251 for sprite one, 53253 for sprite two, etc, going up in odd numbers.

The vertical co-ordinates can be any number between zero and 255. The horizontal co-ordinates are a bit more difficult, because there are a total of 512 locations across the top of the screen. The 64, being an eight bit computer, can only handle poke numbers from zero to 255. So, what the computer does is divide the screen into two halves, and you determine which half of the screen you want the sprite to appear in. You then poke a number between zero and 255 in the side of the screen you have chosen.

LINE 90: Chooses the right hand side of the screen for your sprite. If you decide that you want your sprite to appear in the left hand side of the screen, change the poke to 53264,0.

LINE 100: Turns on the sprite

LINE 110: Expands your sprite to twice its width and twice its height.

If you don't want your sprite expanded, then change the pokes to 53271,0 and 53277,1.

If you have had a bit of an experiment with your sprite, you will have noticed that you can't write over it, use INST/DEL to delete it, clear the screen to get rid of it, or even scroll it. This is because sprites are controlled by the VIC chip, and can only be removed by using the RUN/STOP and RESTORE keys.

Well, that's about all I've got to say about basic sprite programming. I hope you find them useful, as they can, when used properly, turn out to be one of the most powerful programming techniques on the Commodore 64. ❑

HARDWARE PERIPHERAL DISTRIBUTORS Pty Ltd

7/100 Hewittson Road
Elizabeth West SA 5113
Ph: (08)252 3300
Fax: (08) 252 4755

Commodore 64/128 products

Expert 3.2R Cartridge	Backup device with rocket loader	$99.00
Expert v4.1R Enhancement Disk.	21 extra features make the Expert the most powerful backup.	$29.95
C 64 Doctor Cartridge	A fault finding cartridge for your C64 - saves on repair costs.	$54.95
Drive Doctor for 1541/1571	Alignment kit software on tape & disk	$32.95
Datasette Doctor C64	Alignment kit & head cleaning equipment	$24.50
Datasette Back Board D.C.L.I.	Backup from tape to tape	$34.50
Parallel Cable 1541/1571	This cable allows use of parallel backup devices ie: Burst Nibbler & Double Image.	$32.95
Turbo-Menu cartridge	A cartridge for C64 or 128 in 64 mode, loads most software 5 to 7 times faster. Also has menu making facility.	$39.95
Jiffy Dos system 64	2 new switchable kernals 15 times faster loading.	$89.00
Jiffy Dos system C128	2 new switchable kernals 15 times faster loading.5	$119.90
Commodore compatible disk drive	High quality compact reliable	$269.00
Reset Cartridge	saves wear & tear on computer on/off switch	$14.95
Olympia NP30 Printer	80 Column text, 160 character per second, top quality.	$418.00

Amiga products

Amiga Stereo Digitisers	Sound Sampler A500/A2000	$105.00
Amiga Printlin	Printer converter and buffer	$99.00
Amiga MIDI Interface (with MIDI through)	Keyboard interface	$120.00
Amiga 3.5" External Drive	Fully compatable	$199.00
Amiga 500 Memory Expander	With clock/calender and enable switch	$249.00
Amiga 500/2000 Kickstart ROM switch	Accepts 2 40 PIN Kickstart ROMS	$59.00 (without ROM)
	With 1.2 kickstart ROM	$89.00
	With 1.3 kickstart ROM	$99.00

General products

5.25" disks	Box of 10 DSDD fully certified	$13.00
3.5" disk	Box of 10 DSDD	$25.00
Diskette storage box	Hinged lockable, stores 100 5.25" disks	$17.00
Diskette storage box	Hinged lockable, stores 80 3.5" disks	$20.00

Enquire about our complete range of printer stands, monitor stands, dust covers etc:
and range of high quality diskettes.
Call **H.P.D.** on (08) 252-3300

How to order

Mail your order to 7/100 Hewittson Road, Elizabeth West SA 5113.

Money orders & cheques welcome or use your BANKCARD, MASTERCARD or VISA. Please add $3.00 postage to all above prices. For drives and printers add $10.00. Or phone your order now on (08) 252 3300.

We make you the experts!

COMPUTER DISCOUNTS (AUST) PTY LTD

Tel (02) 281 7411
Fax (02) 281 7414

BUCKLAND HOUSE, 19-21 BUCKLAND ST, BROADWAY, 2007. PO BOX 249.
Business hours Monday to Friday 9am-6pm, Saturday 10am-2pm.

M.A.S.T. PRODUCTS
MEMORY AND STORAGE TECHNOLOGY

PERFORMANCE PLUS DRIVES
FEATURE QUALITY FUJITSU MECHANISM
45 meg $1295
90 meg $1695
135 meg $2095

TINY TIGER™
BUDGET 30 meg $999
BUDGET 50 meg $1295
180 meg $2395

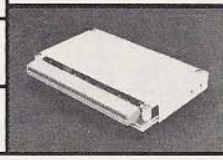
FIREBALL™
DRIVE ON A CARD FOR AMIGA 2000
BUDGET:
30 meg $945
50 meg $1245
PERFORMANCE PLUS:
45 meg $1245
90 meg $1645
135 meg $2045
180 meg $2345

UNIDRIVE
~~230~~ $199

TWINDRIVE
$398

INTERNAL FLOPPY
A2000 $199

MINIMEGS™
memory expansion for A500 & A1000
2 meg $599



MASTerprint
300 dpi PAGE PRINTER
$3295

MASTerprint PS
300 dpi POSTSCRIPT PAGE PRINTER
$6395

MICROMEGS™ - $199 -
ALTERNATIVE TO A501™
512K MEMORY EXPANSION
- ● small size
- ● low power

M.A.S.T.

3.5" DISKETTES
$18.50 pack of 10
$90 pack of 50
WE IMPORT THESE DISKS DIRECTLY FROM JAPAN - SO WE KNOW THEIR SOURCE : QUALITY TO COUNT ON

3.5" H.D. DISKETTES
$55 per 10

PUBLIC DOMAIN $4.50
LARGE COLLECTION:
FISH 1-236 T-BAG 1-17
AMICUS 1-26 FAUG 1-76
INCLUDE $5 P & P

DIGIVIEW GOLD $279

GENLOCK
BY RENDALE LTD
As used by TV companies throughout the world

AC BASIC COMPILER $239

TRUMPCARD (A2000) $359
Choice of 30 to 180 meg SCSI drives

LATTICE C V.50 $379

DOSLAB FROM JUMPDISK
DISK BASED INTERACTIVE CLI TUTOR - V 1.3 WB
GREAT VALUE!!
$29.95

AMIGA COMPANION
Published by AMIGA WORLD
$36

JUMPDISK ~~$19.50~~
THE ORIGINAL AMIGA MAGAZINE ON A DISK - 3 YEARS OLD IN JULY
- ● NEWS
- ● PROGRAMS
- ● PUBLISHED MONTHLY

SUBSCRIBE & SAVE
3 months $45
6 months $83
12 months $159
BACK ISSUES $15 ea

US AMIGA MAGAZINES -
HOT OFF THE PRESS - IMPORTED BY AIR
AMIGAWORLD $9
AMAZING COMPUTING $8.50
TRANSACTOR $8.50
MANY OTHERS AVAILABLE
SUBSCRIBE AND SAVE

SUPRA MODEM
~~300/1200/2400 Baud~~
NOW ONLY **$299**
FULLY HAYES COMPATIBLE
NOT TELECOM APPROVED

A-MAX™
MAC EMULATOR
$259

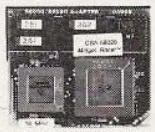
MACINTOSH™ COMPATIBLE FLOPPY DRIVE
NEEDED WITH A-MAX
$299

NEW PRODUCT!!

SOFTWARE
AT OR BELOW US RETAIL ON MANY ITEMS.
SEND $5 FOR CATALOGUE - INCLUDES DISCOUNT COUPONS

EASYL $699
(includes A500/1000/2000)
GRAPHICS TABLET

MIDGET RACER CSA



HOT NEW ACCELERATOR FOR ALL AMIGAS $550
- ● 68020 processor
- ● Optional math co-processor up to 33 Mhz 688821
- ● 50% average speed increase without math co-processor

ALSO: Sculpt Animate 4D $639

NEW! SCULPT-ANIMATE 4D - JNR $199

3D X-SPECS (HARDWARE)
$179

MOUSE PAD
$14.95

ACTIONWARE PHASER GUN
$59.95

DIGIPAINT 3
$99

SUPERBASE PROFESSIONAL V3.0
$399

Boing! Mouse
Professional Optical 3-button mouse for your Amiga. Available EXCLUSIVELY at Creative Computers!

The first and only Optical Mouse for the Amiga — This mouse is definitely the best mouse you can buy for your Amiga.

- ■ Optical technology eliminates friction and momentum coefficients for super-precise handling.
- ■ No moving parts for increased reliability.
- ■ Middle button makes it the only mouse compatible with A2024 software and X Windows.
- ■ Compatible with ALL Amiga computers.

$199

PAGESTREAM $249

LATTICE C++ $599

AMIGA
A500 and A2000 now available from Computer Discounts

Make Your Disks Fly with..... **$49.95**

B.A.D.

The Ultimate Disk Optimizer
Decrease Disk Access Time Up To 500%
Restore Smooth Disk Operation
Designed For Use On Floppies AND HardDrives

Supports Multiple Partitions
FAST CLI Directory Access
Incredible Workbench(tm) Performance
100% AmigaDOS Compatible

A product of M.V. Micro

B.A.D. analyzes, restructures, and processes ANY AmigaDOS disk such that permanent speed increases will be realized. This is NOT a RAM cashe based system!

Mypaint™ **$49.95**
Educational Paint Program & Coloring Book

WORLD ATLAS $69.95

OSWALD
strategy game with a cold hungry bear
$39.95

F-16 FALCON $54.95

ICON PAINT $45
Display Workbench icons in 16 colours. Includes icon paint-program.

BOOKS GALORE CALL!

MAIL ORDER CALL FOR FREIGHT. ALL PRICES SUBJECT TO CHANGE - NO NOTICE

MAC AND MACINTOSH ARE TRADEMARKS OF APPLE COMPUTERS. ALL TRADEMARKS ARE PROPERTY OF THEIR RESPECTIVE CORPORATIONS.

The trials & tribulations of an Amiga Basic novice

by R. W. Daley

This article is in no way a tutorial or source of information, but a reassurance to others caught in the quagmire of Amiga learning that they are not alone.

IN THE TEN months or so of being an Amiga owner I have often had moments of frustration and doubts of my own intelligence. Perhaps my major saviour has been the occasional article or chance meeting that reveals that others have or have had the same experience. So with a feeling of self-sacrifice, I willingly expose my own fallibility for the good of the psyche of others.

About four months ago, after finally coming to terms with the machinations of Workbench etc., I decided it was time I turned my attention to the Extras disk. To be exact Amiga Basic. (If Commodore had to supply basic, couldn't they have at least made it a compiler?)

As I think most people would do, I first turned to the manual supplied with the software. Well, what can I say? This manual is thick and it does contain a lot of information. However to those such as myself, with no background in Basic, as an introduction to basic programming this book makes a good paperweight. Considering the complexity of the Amiga and the corresponding sophistication of Amiga Basic I imagine even those with a basic background would find this manual inadequate.

I then decided the best approach was to leap right in and do a bit of "reverse engineering". This tried and true method has long been a favourite of both small children and top line engineers alike. The results have been as varied as the products examined, ranging from toys being reduced to their smallest components, to the rapid growth of postwar Japanese manufacturing.

The subject of my attack was to be a public domain *Speak & Spell* program with which I'd had some trouble. When the program was run the result was amazing, the speech was something akin to a rooster with its neck stretched and totally unintelligible.

With a deep breath and little else I began to decipher the listing. Fortunately the original programmer had had the decency to include descriptive comments. Almost immediately I found the cause of the squeaky voice. Somewhere along the P.D. trail the "SAY" command parameters had been altered. By returning these to the default values the mostly intelligible Workbench voice was restored.

After this initial success followed by several weeks of tinkering, (only a couple of hours a week, I'm not fanatical about this computing stuff), I thought I was winning. I was wrong. The one thing I had forgotten was the diabolical humour of the inner sanctum of Commodore, for what I am about to reveal to you can only be an attempt at humour by some twisted mind.

Libraries

● With a sense of bravery exceeding my competence, I was looking through the book *Amiga Tricks & Tips* and found a program to make "borderless" Basic windows. This seemed like a good trick, so I typed it in as a subprogram. The program immediately spat the dummy with a "FILE NOT FOUND" display and indicated the line - LIBRARY "intuition.library".

At this point my confidence was such that I thought "Ah good! now I'll find out about these library things." So off I went back to chapter three of *Tricks & Tips* to learn about the Kernel commands and all good stuff it is too. In just two pages this book explains what the kernel is, what a library is and what you need to have so that Amiga Basic can use these libraries.

What it boils down to is that you need a .bmap file of the library and the book happily informs you that "You can easily create the necessary .bmap files using the convertFd program on the Extras diskette from Commodore Amiga", but does not elaborate.

With my confidence still intact I turned to the section in the Amiga Basic manual on calling library routines. This is where the horrible truth is revealed. Commodore have supplied the Amiga with a Basic that can call machine language routines within the operating system, IF the correct files are available to the program.

These files are required to be in the .bmap format, but with Commodore's convoluted logic they have supplied these files in a format for use with assembler or C languages. In lieu of the correct files a Basic program, convertFd, is supplied to convert the .fd files to .bmap files. This program is accompanied by Commodore's usually inadequate instructions and as a result I have spent about four unsuccessful hours trying to make it do something, anything.

At this point I felt some therapy was in order, so I plugged in a games disk

(continued on page 36)

Has Santa got you...

AMIGA

WORD PROCESSING

BeckerText	169.00
Cygnes Ed	99.00
Excellance	299.00
Kind Words II	99.00
Pen Pal (PAL)	239.00
ProText Amiga	195.00
ProWrite V2.0	179.00
ProWrite Fonts 1-2 (Each)	59.00
Scribble Plantinum	99.00
TextPro	99.00
Transcript	99.00

DATA BASE

Acquistion V1.3	499.00
Data Retrieve	99.00
Data Retrieve Professional	299.00
Microfiche Filer Plus	259.00
Organize!	129.00
Superbase Personal	89.00
Superbase Personal 2	149.00
Superbase Professional	399.00
Ultracard	79.00

DTP

City Desk II	249.00
Pagestream	279.00
Pagestream Fonts (Each)	59.00
Professional Page	589.00
Publisher's Choice	199.00
Shakespeare V1.1	295.00
Templates (For Prof. Page)	89.00

SPREADSHEETS

Analyse!	149.00
DG Calc	89.00
HalCalc	79.00
MaxiPlan 500	229.00
MaxiPlan Plus	299.00
Superplan	149.00

BUSINESS

BEST Business Management	539.00
BEST Mini	299.00
Budgeteer	79.00
Day By Day	59.00
Desktop Budget	99.00
Electronic Debtors	249.00
Home Accounts	89.00
Personal Accounts Plus	59.00
PHASAR V3.0	129.00
Securities Analyst	89.00
Small Business Accounting Xtra	199.00
The Accountant	379.00
The Works Platinum	289.00

DRAWING

Aegis Graphics Starter Kit	129.00
Butcher II	59.00
Deluxe Art Parts I & II (Each)	49.00
Deluxe Paint III	259.00
Deluxe Photolab	219.00
Design 3-D	129.00
Digi-Paint 3	129.00
Draw 2000	329.00
Express Paint III	199.00
Photon Paint II	195.00
Professional Draw	269.00
Top Form (Form Maker)	109.00

GRAPHICS

Animagic (PAL)	145.00
Animate 3D	249.00
Deluxe Video	169.00
Digi-View Gold	299.00
Modeller 3D	129.00
Sculpt 3D XL	259.00
Turbo Silver 3D	259.00
Videoscape 3D	279.00
X-CAD Designer	349.00
Zoetrope	169.00

LANGUAGES

AReXX	74.00
Assempro	159.00
Benchmark Modular-2	289.00
DevPack 2.0	159.00
G.F.A. Basic V3.0	179.00
Hi-Soft Basic Professional	229.00
Lattice C Developer V5.0	469.00
USCD Pascal	399.00

MUSIC

AMAS	219.00
C-Zar	389.00
Dr T's Copyist Professional	359.00
Instant Music	49.00
Music X	399.00
Sonix	99.00

UTILITIES

A-Max (With 128K ROMs)	599.00
Ami Alignment Kit	59.00
B.A.D.	75.00
Diskmaster	74.00
Disk Mechanic	119.00
Pixel Script	199.00
Project D	74.00
Quaterback	99.00
Virus Infection Protection	79.00
XCopy	59.00

Our range keeps getting bigger !!
Now we've got OVER 1000 Amiga Software Titles

Great NEW Prices For ...
Excellance .. 299.00
Scribble Platinum .. 99.00
Superplan .. 149.00
Digi-View Gold .. 299.00

EDUCATION

[Over 60 Education Titles]

Animal Kingdom	74.00
Designasaurus	74.00
Discovery Master Disks	59.00
Discovery Data Disks (Each)	32.00
First Shapes	49.00
Fun School 2 (3 Age Groups)	49.00
Intellitype	49.00
Mavis Beacon Teaches Typing	79.00
Robot Readers SERIES (Each)	35.00
Where In World Is Carmen SD	69.00
Your Family Tree (Geneology)	79.00

BOOKS

AMIGA

Advanced Amiga BASIC	39.00
*Amiga 3D Graphics Programming in BASIC	49.00
Amiga Adv. System Prog. Guide	54.00
Amiga Applications	39.00
*Amiga BASIC Inside & Out	49.00
*Amiga C For Advanced Prog.	49.00
*Amiga C For Beginners	49.00
*Amiga Disk Drives Inside & Out	49.00
*Amiga DOS Inside & Out	49.00
Amiga DOS Manual	49.00
Amiga For Beginners	39.00
*Amiga Machine Language	44.00
*Amiga More Tricks & Tips	49.00
*Amiga Programmers Guide	44.00
*Amiga System Prog. Guide	54.00
*Amiga Tricks & Tips	49.00
Becomming An Amiga Artist	39.00
Computer Viruses	44.00
Desktop Video	39.00
Easy Guide To Word Perfect	29.00
First Book Of Amiga	34.00
Hardware Manual	54.00
Inside Amiga With C	49.00
Intuition Manual	54.00
Kids & The Amiga	39.00
Modula-2 Programming	29.00
ROM Kernel Exec	54.00
ROM Kernal Libraries	84.00
Second Book Of Amiga	34.00

C64/128

1571 Internals	39.00
C128 BASIC Internals	44.00
C128 BASIC Training Guide	34.00
C128 CP/M Users Guide	39.00
C128 Internals	39.00
C128 Peeks & Pokes	39.00
C128 Tricks & Tips	39.00
C64 Graphics	39.00
C64 Machine Language	34.00
C64 Peeks & Pokes	34.00
C64 Printer Handbook	39.00
C64 Prog. Ref. Guide	44.00
C64 Science & Engineering	39.00
C64 Tricks & Tips	39.00
C64/128 Collection 2	42.00
CAD On The C64/128	39.00
GEOS Inside & Out	49.00
GEOS Official Prog. Guide	49.00
*GEOS Tricks & Tips	44.00
Quest For Clues I/II (Each)	44.00
Second Book Of 128	44.00
Superbase The Book	39.00
The Creative PrintMaster	32.00

[Those books marked with an '*' have a Supplimentary Disk available for $22.00]

FREE Postage
FREE Price Lists
FREE Advice

Do your Xmas shopping now !!
Avoid the rush.

GIFT VOUCHERS
for any amount
IDEAL XMAS GIFT

INTERLINK SOFTWARE PTY. LTD.

Business Hours 9am -5pm Mon-Fri

something from

AMIGA

ARCADE GAMES

African Raiders	49.00
Altered Beast	59.00
A.P.B.	49.00
Arcades & Backdoors	39.00
Arkanoid II	49.00
Astaroth	59.00
Bangkok Knights	59.00
Barbarian II	59.00
Batman "The Movie"	59.00
Battlehawks 1942	59.00
Battletech	59.00
Battle Valley	49.00
Beam	59.00
Beast	74.00
Blood Money	59.00
Bomb Busters	49.00
Brainstorm	34.00
Butcher Hill	59.00
Cabel	59.00
Cadaver	59.00
Chariots Of Wrath	59.00
Chase H.Q.	59.00
Circus Games	49.00
Classic Invaders	39.00
Dynamite Dux	59.00
Emerald Mine II	59.00
Fiendish Freddy	69.00
F.O.F.T.	69.00
G.Nius	49.00
Ghostbusters II	59.00
Grand Monster Slam	59.00
Gunship	69.00
Hawkeye	49.00
Hostages	59.00
Indiana Jones "Last Crusade"	69.00
It Came From The Desert	65.00
Kristal	69.00
Kult	59.00
Leonardo	49.00
Licence To Kill	49.00
Lost Worlds	52.00
Moonwalker	59.00
Mr Heli	49.00
New Zealand Story	59.00
Operation Thunderbolt	59.00
Panic Stations	59.00
Phobia	59.00
Powerdrift	59.00
Powerdrome	59.00
Powerplay	49.00
Rainbow Islands	49.00
Rick Dangerous	49.00
Robocop	59.00
Shadow Of The Beast	79.00
Shoot 'Em Up Construction Kit	59.00
Silkworm	49.00
Skweek	49.00
Star Wars Trilogy	59.00
Strider	59.00
Sword Of Sodan	69.00
Targhan	59.00
Technocop	49.00
Test Drive II	49.00
The Story So Far - Chapter 1	49.00
The Story So Far - Chapter 3	49.00
Thunderbirds	59.00
Vigilante	49.00
Wanted	44.00
Weird Dreams	59.00
Wicked	59.00
Xenon 2	54.00
Xybots	49.00

STRATEGY GAMES

Archipelogos	59.00
Balance Of Power 1990	69.00
Bismark	59.00
Carrier Command	69.00
Conflict In Europe	59.00
Fire Brigade	49.00
Joan Of Arc	49.00
Kennedy Approach	59.00
North And South	59.00
Populous	49.00
Populous Data Disk	39.00
Rainbow Warrior	59.00
Santa Paravia	44.00
Shaghai	59.00
Sim City	69.00
Vulcan	49.00
Waterloo	59.00

SPORTS GAMES

3D Pool	49.00
Adidas Golden Shoe	59.00
Buffalo Bill's Rodeo Games	59.00
Earl Weaver's Baseball	32.00
Fighting Soccer	59.00
Greg Norman's Ultimate Golf	59.00
Honda RVF	49.00
Jack Nicklaus Golf	59.00
Kick Off	49.00
Lombard RAC Rally	59.00
Microprose Soccer	59.00
Rally Cross	49.00
Ringside	49.00
Skidz	59.00
TV Sports Football	69.00
Zany Golf	59.00

ADVENTURE GAMES

Arthur : Quest For Excalibur	59.00
Bard's Tale I/II (Each)	49.00
Bloodwych	54.00
Dungeon Master	59.00
Dungeon Master Editor	32.00
Heroes Of The Lance	59.00
Journey	69.00
King's Quest I/II/III (Each)	44.00
Legend Of Duel	59.00
Leisure Suit Larry	54.00
Lords Of The Rising Sun	69.00
Millenium 2.2	59.00
Mortville Manor	39.00
Murder In Venice	59.00
Ooze	54.00
Police Quest	59.00
Rocket Ranger	69.00
Shogun	69.00
Sleeping Gods Lie	59.00
Space Quest I/II (Each)	49.00
Talespin	69.00
The Final Battle	59.00
The Untouchables	59.00
Times Of Lore	59.00
Tower Of Babel	59.00
Ultima III/IV (Each)	59.00
UMS	64.00
UMS Scenarios (Each)	29.00
War In Middle Earth	59.00
Zak McKracken	52.00
Zork Zero	69.00

FLIGHT SIMS

Bomber	59.00
F16 Combat Pilot	59.00
F29 Retaliator	59.00
F/A 18 Interceptor	49.00
Falcon	54.00
Falcon Mission Disk	49.00
Flight Simulator II	85.00
Flight Sim II Sceneries (Each)	49.00
Lancaster	49.00

SPECIALS FOR DECEMBER

It Came From The Desert .. $65.00
Falcon + Mission Disk .. $95.00
Bloodwych .. $54.00
Xenon II .. $54.00

TOP 5 GAMES LAST MONTH

1. *Sim City*
2. *F16 Combat Pilot*
3. *Falcon Mission Disk*
4. *Dungeon Master*
5. *Populous*

INDOOR/ BOARD GAMES

Battle Chess	64.00
Bridge V5.0	59.00
Casino Fever	59.00
Centrefold Squares	44.00
Chessmaster 2100	59.00
Colossus Chess X	59.00
Daily Double	49.00
Emmanuelle	44.00
Hollywood Poker	29.00
Scrabble Deluxe	49.00
Solitaire Royale	49.00
Strip Poker II Plus	39.00
Teenage Queen	49.00
The Surgeon	79.00

ACCESSORIES

Blank Disks - 3.5in

HMC	26.00
Memorex	29.00
Precision	24.00
Xidex	29.00

Blank Disks - 5.25in

Memorex	23.00
Precision	15.00
Xidex	24.00
Precision (DSHD)	24.00

Disk Container Boxes

3.5in 40 Disks	22.00
3.5in 80 Disks	25.00
3.5in 120 Disks	32.00

Others

Keyboard Cover A500	19.00
Mouse Pad	19.00
Safe Skin A500	54.00
XSpecs	199.00

Your Software Warehouse!

- ☐ FREE POSTAGE anywhere in Australia by surface mail
- ☐ FRIENDLY STAFF offering good advice in helping you to decide the product you need
- ☐ HUGE RANGE OF PRODUCTS for AMIGA, C64/128, IBM PC and ATARI ST
- ☐ FREE PRICE LIST with every order — also available on request
- ☐ GIFT VOUCHERS for any amount — just in time for CHRISTMAS

We will be closed over Xmas from 23/12/89 to 7/1/90

the 'Warehouse'?

C64/128 (Disk)

BUSINESS

Bank Street Filer	69.00
Electronic Cash Book 64	89.00
Fleet System 2 Plus 64	59.00
Fontmaster 128	89.00
GeoCalc 64	69.00
GeoChart 64/128	54.00
GeoFile 64	69.00
Geos Font Pack 64/128	44.00
GeoWrite Workshop 64	69.00
Mini Office II	44.00
Newsmaker 128	59.00
Paperclip III	98.00
Paperclip Publisher	54.00
Pocket Filer Series 2	69.00
Pocket Planner Series 2	69.00
Pocket Writer Series 2	69.00
Superbase 64	59.00
Superscript 64 Or 128	69.00

GRAPHICS

CadPack 64	69.00
Colorez 128	29.00
Flexidraw V5.0	59.00
Home Designer 128	59.00
Home Video Producer	79.00
Page Illustrator 128	59.00
Sketchpad 128	49.00
Spectrum 128	49.00

LANGUAGES

Basic 8 128	59.00
Basic Compiler 64	69.00
Blitz Compiler 64 Or 128	39.00
COBOL 64	59.00
Forth 64/128	59.00
Super C 64 Or 128	98.00
Super Pascal 64	89.00
Tool Box 64/128	23.00
Video Basic 64	59.00

MUSIC

Instant Music	35.00
Music Construction Set	25.00
Rock 'N Roll Studio	32.00

Over 850 C64/128 Software Titles

UTILITIES

1541/71 Drive Alignment	44.00
Action Replay Mark V	139.00
Family Tree 64 Or 128	89.00
GEOS V2.0 64 Or 128	95.00
PrintMaster Plus	59.00
Speedterm 64/128	59.00
Super Snapshot Mk 4	98.00
The Print Shop	74.00

EDUCATION

[We have over 150 titles]

Alge-Blaster!	69.00
Algebra I/II/III (Each)	44.00
Bagasaurus	24.00
Decimal Dungeon	39.00
Designasaurus	54.00

GAMES

3D Pool	35.00
A.P.B.	36.00
Barbarian II	39.00
Bard's Tale I/II/III (Each)	34.00
Bomber	35.00
Chase H.Q.	35.00
Chessmaster 2100	44.00
Chuck Yeager's FS	34.00
Crossbow	49.00
Curse Of The Azure Bonds	49.00
Dream Warrior	34.00
Dynamic Duo	35.00
Elite Collection	32.00
F14 Tomcat	39.00
F15 Strike Eagle	39.00
F18 Hornet	35.00
Early Games	39.00
Fun School 2 (3 Age Groups)	28.00
Mavis Beacon Typing	59.00
Sesame St SERIES (Each)	25.00
Sesame St Crayon SERIES (Ea)	29.00
Sky Travel	69.00
Speed Reader II	69.00
The Body Transparent	44.00
Ticket To .. SERIES (Ea)	49.00
Type!	29.00
Where Carmen SD SERIES (Ea)	59.00
Word Attack!	69.00
Friday The 13th	24.00
Ghostbusters II	35.00
Gunship	49.00
Heavy Metal	39.00
Hillsfar	49.00
Hunt For Red October	49.00
International Team Sports	49.00
Kick Off	39.00
Leonardo	39.00
Microleague Baseball	59.00
Microprose Soccer	49.00
Monopoly	39.00
Moonwalker	35.00
Omni-Play Basketball	49.00
Operation Thunderbolt	35.00
Panic Stations	35.00
Pirates	49.00
Pool Of Radiance	49.00
Rack 'Em	42.00
Rainbow Warrior	44.00
Rally Cross	44.00
Robocop	35.00
Scrabble Deluxe	35.00
Silent Service	39.00
Silkworm	39.00
Sim City	49.00
Supertrux	39.00
Tangled Tales	49.00
Test Drive II	39.00
The Story So Far - Chapter 4	44.00
The Untouchables	35.00
Thunderbirds	46.00
Times Of Lore	49.00
Total Eclipse II	39.00
Ultima IV/V (Each)	49.00

INTERLINK — Your one stop software and accessories supplier.

ORDER FORM

Product Name	Computer	Price	Qty

Name .....

Address .....

..... *Daytime Phone* ( ) .....

Cheque ☐ Money Order ☐ Visa ☐ Bankcard ☐ Mastercard ☐

Full Card No

Expiry Date .....

Signature .....

How To Order -

Fill out the order form (or write on any piece of paper) and send to -

P.O. Box 1155
Tuggeranong ACT 2900

24 HOUR ORDERING
(062) 93 2233

FAX (062)
93 1438

FREE Delivery anywhere in Australia

INTERLINK SOFTWARE PTY. LTD.

OFFICE:- UNIT 2, 216 COWLISHAW STREET, TUGGERANONG TOWN CENTRE

"Commodore have supplied the Amiga with a Basic that can call machine language routines within the operating system, IF the correct files are available to the program."

and blasted a few thousand alien invaders, but gratuitous violence was not the answer. Resigning myself, I turned off the computer and headed for the lounge room. My wife looked up and said "Finished playing with our toy, have we?" Wives can get very royal when left on their own. The cat looked up with one of those looks only cats can give. You know the one ... it says "Hmff, can't even open a library routine, eh? I could tell you but I'm not going to."

So there I sat watching The Comedy Company, contemplating the meaning of life, the universe, Commodore logic. Why supply Basic with a computer the standard of the Amiga? Why not at least a Basic compiler? Why in a book on Basic do they tell you that "parameters are passed by standard C-language conventions"?

Kylie Mole flicked onto the screen. Somewhere in the world, somebody knows all about .bmap files. No, that's wrong. All over the world thousands of people know about .bmap files. Probably half of them illiterate teenagers unable to use lend and borrow in the correct context, using the word "got" as every second adjective. All of them using .bmap files willy nilly just to make me feel inferior. Have you ever noticed how computing can induce raving in otherwise normal people?

Well, look at that, Colin Carpenter's in the army. Perhaps I'm missing something, there must be some common factor underlying Commodore's entire Amiga concept. Surely a large successful computer company must follow a logical stratagey. After all, logic is what computers are all about, isn't it?

Wait! The answer has just come on the television. Commodore must have sub-contracted the documentation and I know to whom. Bastards Incorporated.

So remember if you've been sitting there fuming about .bmap files or for some other reason feeling your brain has turned to jelly, it's not your fault. You're up against experts. Don't despair, people no smarter than you have met the challenge, but most importantly you are not alone. ❑

Where can you get over 2.4 Megabytes of software for $24.95?

From the editors of the Australian Amiga Review

Amiga-Live! issue three.

Three disks of hand picked public domain software, graphics and demonstrations.
We crunched them to fit.
We increased the floppy disk access speed by a factor of **400%**.
Now you can collect quality software cheaply, quickly, from people whose judgement you can trust.

Contents Of Issue Three - ***NEW FORMAT***

Bally(AR) - Blackbox(S) - Pacman(AR) - Castle(GAD) - World(AD)
Graphics(AT) - Vacbench(H) Plot(Ed) - AMC(UT) - Tunnel(AT) - Pz15(S)
Tetrix(S/AR) - Blitlab(UT) - FracGen(AT) - BootIntro(UT) - Diet Aid(PR)
Mouse Util(UT) - Atari-Emulator(H) - Furnish(PR) Mackie(UT)
AD= Text Adventure AT=Artistic AR=Arcade Ed= Eductional GAD=Graphic Adventure H=Humerous PR=Productivity S=Strategy T=Technical UT=Utility

PHONE (02) 817-0011
TOLL FREE (008) 25 2879
Credit Card and C.O.D. accepted over the phone.

ORDER FORM

Send cheque or money order made out to Prime Artifax, or use your credit card.

Name:_____ Day Phone:_____
Address: _____
Post Code: _____ Credit Card (tick) VISA ○ M/C ○ B/C ○
Card Number: ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ Exp: ❑❑/❑❑
Please rush me issue three of Amiga-Live! I understand I will receive three disks within 14 working days of receipt of this order. Signature: _____

POST TO: Prime Artifax, 9 Augustine St, Hunters Hill 2110

At Last!

A joystick so realistic... it puts you amongst the action!

Ideal Christmas Gift ... the "STARCURSOR" Joystick

For fast and accurate game power!

Rated by Commodore Amiga Review as "King of the league"

The new "STARCURSOR" means accuracy - accuracy that's impossible with a joystick that can't keep up with your reflexes. When you're playing for high scores, you don't want to be handicapped by an inefficient joystick.

... The "STARCURSOR" is the closest thing there is to the perfect joystick... it's fast... reacting to your touch instantly, and it's accurate... giving you the highest percentage of scoring hits possible.

The Starcursor is designed around the commercial "Multicoin" joystick - considered by many coin machine operators to be the best joystick on the market for accuracy and durability. **It is tested and proven to last...no matter how often or roughly you use your joystick.**

SUITS ALL COMPUTER GAMES

Your Starcursor can be adapted to suit any game with the simple *Change over switch* situated on the bottom of the joystick. This gives you the choice of a 4 and 8 way action for exact game control.

FIRE POWER - THE CHOICE IS YOURS

As well, the unique "common button switch" lets you use the Starcursor's three firing buttons together, independently or two together depending on the game you are playing.

GUARANTEED FOR THREE YEARS

by the manufactures, Multicoin Amusements Pty Ltd.

Dealer enquiries to:

Multicoin Amusements Pty. Ltd.
17 Wrights Place
Labrador, Gold Coast, Australia, 4215
Ph: (075) 37 5711 Fax: (075) 37 3743

W.A.

J. Mills Agencies
Ph: (09) 344 1660 Fax: (09) 345 1308

AUSTRALIAN MADE

Z-80 machine language on the 128

by David Williams

THE COMMODORE 128 HAS two processors. One is the 8502. This is a superior model to the 6510 used in the 64, although they are both of the same family and use the same commands. It is this processor that is used to drive both the 64 and 128 modes.

The other processor is the Z-80A. This is used for CP/M.When the Commodore 128 is turned on, or reset, the Z-80 is active, and 4K of Z-80 ROM is used.

This checks for any cartridges in the expansion port (if so, 64 mode is enabled, and then the 8502), if the commodore key is held down (this does the same), the CP/M boot disk is checked for, some memory is moved around, and the 8502 is enabled, and control passed to it. The Z-80 has stopped at $ffed, and so if it were to be re-enabled, it continues from the routine at $ffee.

Located here is a RST command, to perform a warm start of CP/M mode.The currently active processor is determined by bit 0 of the mode configuration register ($d505 in the I/O block). If this bit is clear, the Z-80 is activated. A set bit means that the 8502 is activated.

Commodore computer PCB exchange service

◆ Same day certified mail despatch ◆
◆ Three months warranty cover ◆

Amiga 500 **$129**

Commodore C64, 64C **$99**

- Simply remove your faulty board from its casing
- Your board must be complete and in serviceable condition.
- Forward your securely packed board together with your remittance to:

Parcom PTY LTD
Whites Hill Shopping Village
Samuel Street
Camp Hill, QLD, 4152
Phone (07) 395 2211

BANKCARD/MASTERCARD/CHEQUE/POSTAL ORDER

NAME.....

ADDRESS.....

PHONE..... PC.....

PAY BY CHEQUE..... B/C..... M/C..... Postal Order.....

CARD NO.....

EXPIRY DATE.....

SIGNATURE..... DATE.....

So, how do we use the Z-80 in 128 mode? First we need a program. There is a free space at $0c00, and so it could go there. The following simple demonstration should give you an idea:

```
$0c00 3e 48  ld a,$48$
0c02 32 0b 0c ld ($0c0b),a
$0c05 3e 49  ld a,$48
$0c07 32 0c 0c ld ($0c0c),a
$0c08 c3 e0 ff jmp $ffe0
```

This just puts the values $48 and $49 in the bytes after the jmp command, and then performs a jmp $ffe0 - this is the routine that enables the 8502, and so takes us back to where we left off. However, the monitor in the 128 is for 8502 mnemonics only, so to enter this, the M command must be used.

```
m 00c00 >00c00: 3e 48 32 0b 0c 3e 49 32>00c08: 0c 0c c3 e0
ff
```

Now, we must change the command at $ffee, or the normal RST command will be executed. A jmp $0c00 must be placed there.

```
m ffee>0ffee c3 00 0c
```

Okay, and now we must write a routine in 8502 code to enable the Z-80, and continue when the 8502 is restored.

This can be done by typing the following:

```
a 0c10
sei
lda #$d505and %11111110
sta $d505
nop
brk
```

This disables interrupts, and changes bit 0 of $d505, enabling the Z-80, which executes the jmp command, and then the routine to put two bytes into memory. The 8502 is then reactivated, and continues at the nop command. The brk leaves us in the monitor, so to start :g 0c10. The computer returns instantly to the monitor, so read memory locations $0c0b and $0c0c, and you will see they contain $48 and $49, respectively.m 0c0b

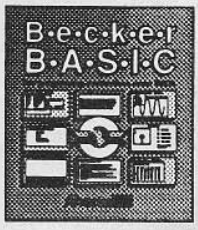
A simpler way of calling the Z-80 is to call the routine at address $ffdi in 8502. To return to the 8502 from the Z-80, use the routine at $ffe0.

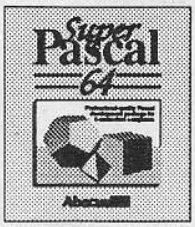
So, more evidence as to the flexibility and power of the 128. You may wonder what use this has, but it makes converting Z-80 programs much simpler. The Z-80 is also a faster processor than the 8502, among many other uses. Have fun! (If that's the right word!) ❑

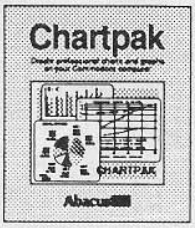
Abacus

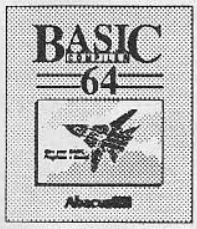
SOFTWARE AND BOOKS FOR

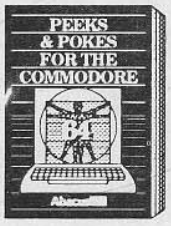
commodore 64/128

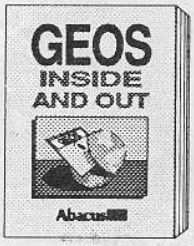


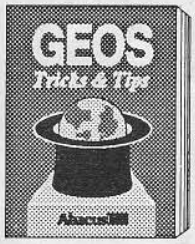


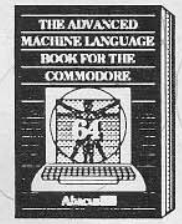


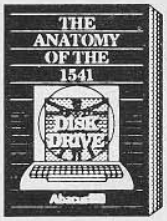


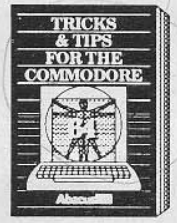


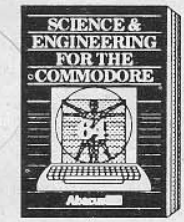


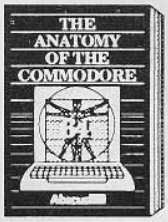


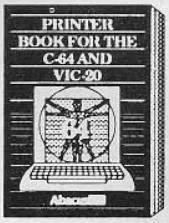


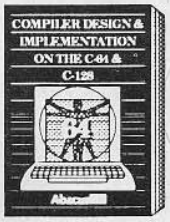


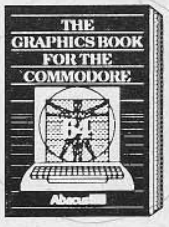


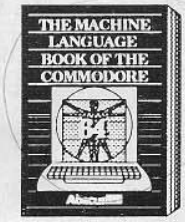












Distributed in Australia by

COMPUTERMATE

products (australia) pty. ltd.

9 High Street, Mt. Kuring-Gai, N.S.W. 2080
Phone: 02 - 457-8118 Fax: 02 - 457-8739

512KB RAM EX

AMIGA 500 MEMORY EXPANDER

- **EXPANDS** the Amiga 500 memory to over 1 megabyte allowing the user to play some of the latest games with enhanced sound and graphics.
- **SIMPLE** to install, just plug it in.
- **REALTIME** clock/calendar with **NICAD** battery backup.
- **NEW ENABLE SWITCH** — this switch allows you to turn off the extra ram at your leisure. NOTE: Some games require the extra ram to be turned off otherwise they won't run.
- **COMPATIBLE** — fully compatible with the AMIGA 500.
- **VERY LOW** power consumption.
- **12 MONTHS GUARANTEE.**

This product has been built in Australia by Home Entertainment Suppliers Pty. Ltd., using the latest **state of the art** technology. Only the best local and overseas components have been used to give you a highly efficient and compact component.

Proudly made in AUSTRALIA by

HOME ENTERTAINMENT SUPPLIERS PTY LTD

UNIT 1/128 BONDS RD., RIVERWOOD, N.S.W. 2210

PANSION CARD

For Commodore Amiga 500

Clock/Calendar and Enable Switch

Kmart

Always low prices...Always.

WITH

NEW ENABLE SWITCH

Tired of BASIC? Try Power C.

by David Fong

COMMODORE 64/128 owners are perhaps aware that many Amiga programmers do not discuss BASIC or machine language, instead they use "C". This is not at all unusual, considering that major movies (*Star Wars, Star Trek)* programmed their special effects in C, and major software developers, such as Microsoft, are writing their code in C.

It is only natural that C suits the Amiga, but Commodore 64/128 owners need not feel left out of this trend. Two version of C are available to Commodore 64/128 owners: *Super C* by Abacus and *Power C* by Pro-line (distributed by Spinnaker). Both versions are nearly standard Kernighan & Ritchie (not ANSI) implementations of the C language. It is *Power C* that is reviewed here.

Power C includes both Commodore 64 and 128 compilers in the same package (Note: "compiler" is a program that changes a program permanently into machine language. This contrasts with "translater" or "interpreter", which converts programs into machine language every time the program is run - eg: BASIC).

This package, which includes a 60 page manual, costs $70 in Australia. This compares favourably with *Super C*, which costs $86 for each of the 64 and 128 versions. What *Power C* doesn't include, which *Super C* does, is a teaching manual. Once upon a time, *Power C* did include a manual, and cost $US100. Frankly, I would rather choose my own textbook, rather than have one imposed upon me at a cost. As a matter of interest, *Power C* used to come with *C Primer Plus*, by the Waite Group.

I purchased the second edition of this book separately and have found it very useful. However, there are no doubt programmers of different abilities to my own out there, so I feel Pro-Line are correct in leaving the choice to the buyer. *Power C*'s clear manual includes details of memory usage and library routines, as well as the obligatory explanation of how to use the main programs (shell, editor, compiler, linker) provided.

The *Power C* programs come on two double sided disks, one for the C64 and the other for the C128, and is not copy protected.

Typing in a C program

● One cannot simply use the BASIC editor provided and call up the C compiler to do its job. C does not use line numbers, although lines can be "labelled". C also makes use of special characters, such as curly braces and tildes.

Pro-line have provided their own editor, which features such basics as search/replace, insert/delete and cut/paste. Program lines tend to be short in C, but even so, the editor horizontally scrolls over 240 columns, allowing detailed comments and the occasional mathematical monster. Special keypresses have been define to allow the programmer to quickly move through the program. When comparison and cut/paste between two program blocks are required, buffers can be created allowing separate program blocks to reside in memory. Two versions of the editor are provided.

The simpler ("ED") provides all the vanilla functions mentioned. The slightly larger ("CED") also provides a syntax checker. Since compilation can take place over a few minutes this feature is invaluable to prevent "stupid" bugs, leaving more time to solve more serious logical errors.

A change of environment

● Editor, compiler and linker are all called up from a special environment provided by Pro-line. Since only programmers are using this environment, Pro-line have wisely chosen an environment that suits programmers, Unix. This little wonder allows such luxuries as redirection and command line arguments. Redirection allows programs to derive input from a disk file, or send output to a disk file, as if the disk drive was a "keyboard" or a visual display unit.

Command line arguments allow a user to set options whilst actually calling the program. Such options may include "two disk drives are in use" or "printer is device number 5". These options can have a default value, so a user with one disk drive and a printer with device number 4 doesn't need to worry about such "arguments" at all. In addition, the Commodore 128 version of the shell includes a RAM Disk. 191 blocks are provided shared between two disks. This allows much faster compilations and so on, as the bottleneck of disk drive speed is practically eliminated.

In case you haven't guessed, *Power C* comes only on disk, and cannot be used by a cassette-only system. The Commodore 128 version takes advantage of the 1571's extra speed. The Commodore 64 version uses vanilla 1541 loading, but can take advantage of fast load cartridges such as "Warpspeed".

Compiler

● The real guts of the package is the compiler. *Power C*, like *Super C*, does not understand bit fields, a way of arranging true/false statements.

Of course, logic variables can be simulated with simple integers. Otherwise, the *Power C* compiler is very good indeed. The 64 version is able to produce code a mere 53% slower than the equivalent written in pure machine code! (see Figure 1).

Sad to say, this miracle is dampened by a bug in the 128 version. Apparently, the 128 compiler incorrectly converts floating point to integers! This very serious flaw is not present in the 64 version (thank goodness), but it severely detracts from the usefulness of the 128 compiler. I have written to Pro-line and Spinnaker regarding this problem, and eagerly await a reply.

128 owners can use the 128 version of the editor/compiler to take advantage of the ram disks during debugging, and then use 64 mode to run the finished program. In 64 mode, 128 owners can turn

on 2MHz mode, enabling 128 users to run C faster than a 64 can run machine language!

Linker

● A feature of C that may seem quite unusual to BASIC programmers is the necessity to "link" programs before use. In fact, this is a very useful feature. "Linking" involves tying the code produced by the compiler to other bits of code produced by the compiler, as well as to library functions (such as maths, or disk I/O).

This allows the compiler to only compile a small amount of the program at a time, and for special libraries (such as graphics, or statistical mathematics) to be built up which can be re-used easily in different programs. Whilst the advantages of the latter are obvious, the former may require explanation. I have written BASIC code that has exceeded 25K in length. Sad to say, it takes ages to find code that needs to be changed, making the programming process considerably less pleasant. With a linker, one can concentrate on small chunks of code one at a time.

This is rather like having work arranged in a filing cabinet rather than strewn all over the desk. Whilst a small amount of discipline is required to keep everything in its place, the net benefit is well worth the trouble.

Libraries

● The reader may have noted that the aforementioned libraries will affect the usefulness of the program. The *C Power* library is an attempt to imitate the Unix library, and includes many standard functions familiar to C programmers. These functions are mainly concerned with I/O functions to screen, printer and disk as well as maths functions, such as trigonometry. One alarming omission from the 64 library is the "poke" function. Fortunately, this is easily rectified.

Program 1 and Program 2 are my solution to the problem. Machine language access is catered for in both versions, allowing the passing of A,X,Y register contents.

Conclusion

● *Power C* produces stand alone programs that can be run from BASIC. If compiler options are used, SYSable programs that start at any address can be created, and memory usage can be dictated. There are problems with *Power C*, the 128 floating point to integer conversion flaw being the most serious. Indeed, there are problems with C as a whole to BASIC programmers, as time needs to be spent when using C to do the mundane tasks of compiling and linking. However, blinding execution speed is the payoff, resultant programs being 15 to 50 times faster than BASIC (Brannon 86 and PLATO 87).

In addition, C is a fully structured language allowing extensive control over variables and functions. Strangely enough, one possible market for *Power C* would be Amiga owners. Almost all technical manuals and serious Amiga reference books will assume that the reader is a fluent C programmer.

Despite this, some programmers would probably prefer to program the Amiga in machine language, Pascal, Modula-2 or some other language. These

C64/128 + AMIGA
SOFTWARE

ISLAND SOFTWARE CLUB has 1000's of great public domain programs for the Amiga or C64/128 packed into single disk collections at just $5.00 EACH including FREE postage & handling! Programs include:

GREAT CHRISTMAS GIFT IDEA

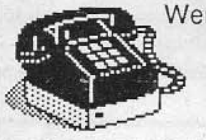
★ Arcade & Adventure Games
★ Business Applications
★ Computer Education
★ Word Processing
★ Graphics & Sound
★ General & Disk Utilities
★ Databases
★ Spreadsheets
★ Printer Utilities
★ GEOS Applications
★ CP/M Applications
★ Bulletin Board s/w
★ Communications s/w
★ Astronomical s/w
★ Benchtop Utilities
★ CLI Utilities
★ Anti-Virus Utilities
★ ML Utilities & more...

Club Membership also gives you Membership to the Island BBS (03) 742 3993. Also a great colection of wholesale commercial software & hardware! Plus, for a limited time you get your first order of 10 DISKS FREE of charge! That's a whopping $50.00 saving! Hurry while it lasts!

FREE OFFER! 10 DISKS

ISLAND SOFTWARE CLUB MEMBERSHIP

send to: Island Software Club
FREEPOST 49
P.O. Box 381
Werribee VIC 3030



(03) 741-9981

Please rush me my Membership at $50 plus 10 FREE disk order form
Name:_____
No & Street_____City/Town:_____
State:_____Post Code:_____
Phone: (___)_____Computer: C64(_)C128(_) Amiga(_)
Payment Type: Bankcard (_) Mastercard (_) Visa (_) Amex (_)
Diners (_) Cheque (_) M/Order (_)
Card # (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_)
Expiry Date:__/__/__ Todays Date:__/__/__
Card Holders Signature:_____
Cheques & Money Orders should be made payable to: ISLAND BY MAIL.

people are obviously at a disadvantage; in order to understand the Amiga, they must understand C, but like any other language, understanding comes only with use. With C compilers for the Amiga costing around the $500 mark, some Amiga programmers are going to be forced into using C exclusively, even if they don't like C. *Power C* removes this restriction, by allowing Amiga programmers with a Commodore 8-bit computer to use C at far less cost.

This also applies to those who want to use C now, but are still saving pennies until they can afford an Amiga C compiler. Overall *Power C* is an excellent purchase, and Commodore 64/128 owners need not feel left out of this exciting language.

References

● Interested readers may like to read different views about *Power C*, and its competitor *Super C*.

To these readers I suggest:

Evers 1985 - "C Power: A Users Review", The Transactor. Nov 85, Volume 6, Issue 3. Brannon 1986 - "Another Look at C", Compute!"s Gazette. Jan 86, Issue 31, Vol 4, No.1. Note that both Evers 1985 and Brannon 1986 reviewed the old version of "Power C", titled "C Power". Since then the Commodore 128 version of the program has been written and the manual extensively revised.

Herst 1987 - "A Tale of Two Cs", The Transactor, Mar 87, Volume 7, Issue 5. Not that this is a comparative review and includes a review of "Super C". "C Power" is still "Power C" at this stage. I suspect the "C Power" manual has been revised since 1987.

PLATO 1987 - "A Comparison of Language Speeds", The Transactor, Mar 87, Volume 7, Issue 5. An interesting article, regardless of what language you are interested in. Power C (64 version) clocks in the fastest out of 20 languages, being only 53% slower than machine language. Super C (64) was 6th fastest, not including machine language, being 519% slower than machine language. The test program is the venerable Erastothenes Sieve, used to find the first 1000 primes.

Rose, 1987 - "A Dissenting Vote, for C Power", The Transactor. Jul, 87. Volume 8, Issue 1. Herst believed "Super C" to be superior, due to better documentation (ie a C language teaching manual) and larger libraries. Rose disagrees, arguing that "Power C (still "C Power" in 1987)" produced faster and smaller programs. I feel speed and code size are more important considerations to programmers, so I tend to agree with Rose, although I haven't used Super C myself.

Figure 1.
From PLATO 1987
Test: Erastothenes Sieve.

Finds first 1000 primes
Machine: Commodore 64, 1MHz

	Primes printed	No print
Basic 2.0	- 11:36	8:10
Super C	- 3:18	2:58
Power C	- 0:49	0:37
Assembler	- 0:32	0:26

Power C is available from Briwall Australia for $70.

Tips for Power C users

● Commodore 64 users have enjoyed a full screen editor for so long that it is difficult for them to realize that many computer systems do not enjoy this basic feature. *Power C*'s shell appears to be one such system. Hasler (Transactor, May 1987) indicated that this was not the case.

If you wish to edit a line, cursor up with the standard cursor keys and correct the line, but don't use RETURN straight away. Move to the line above and hit RETURN to move the cursor down to the corrected line, and then hit RETURN again.

This is an undocumented "feature", and so should be exercised with caution (assuming that programmers have any).

Though not mentioned in the manual, the *Power C* disk comes with a library maintenance program. This is provided in source code, and so has to be compiled. The C64 version works perfectly, but the C128 version crashes whenever a "Press key to continue" request pops up. A quick look at the source code explains why. The 128 code is basically unchanged from the 64 version! This proves fatal when the single SYS call is made to a KERNAL routine. The C128 compiler requires a bank number to be supplied whenever a SYS call is made, whereas the 64 version does not. The cure is simple. Load up the program into an editor and set up a search for a SYS call (there is only one). Change the call to conform to the C128 format, as is described in the manual. After this short change, the library maintenance program works perfectly. ❑

Poke and Peek code for Commodore 64 Power C

C code, compile to and object file and place in a library.
'Link' into your own program when required.

```
poke (address,value)
unsigned address,value;
    +
    char    add_lo = address & 0xff;
    char    add_hi = address / 0x100;     /* low and high bytes of address */
    char    v = value;                    /* convert value into char type */

    sys     (0xc000,&v,&add_lo,&add_hi);
    return;
    i

peek (address
unsigned address;
    +
    char    add_lo = address & 0xff;
    char    add_hi = address / 0x100;     /* low and high bytes of address */
    char    value;

    sys     (0xc010,&value,&add_lo,&add_hi);

    return (value);
    i
```

Machine code portion

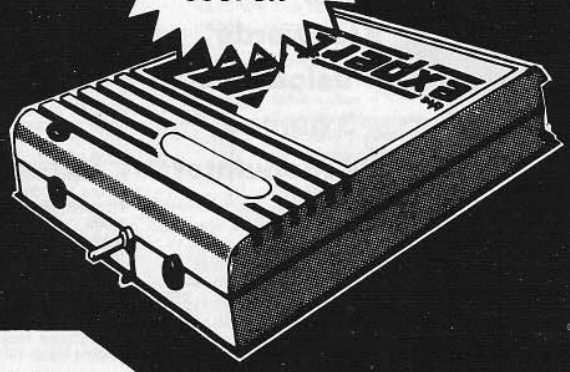
```
c000    stx $c007           ;poke
c003    sty $c008
c006    sta $d030           ;note, $d030 is a 'dummy' value
c009    rts

c010    stx $c017           ;peek
c013    sty $c018
c016    lda $d030           ;note, $d030 is a 'dummy' value
c019    rts
```

There is no doubt a more elegant way to do this in machine language, but I don't use C instead of machine language for nothing! Most people with some knowledge of machine language will easily be able to relocate the above code to suit their own purposes.

FOR A PROFESSIONAL BACK-UP ON COMMODORE 64/128 (64 MODE)

NOW WITH **BONUS** V3.2 UTILITY DISK COUPON

the expert CARTRIDGE



BACK-UP	Disk to disk. Tape to disk. Disk to tape. Tape to tape
MULTILOAD	Yes, it makes back-ups of multiloads
FREEZES	Freezes and saves programs to disk or tape
ONE FILE	Programs are saved in one file
COMPACTS	Programs are compacted to reduce disk space used
SAVES MORE	You can save 3 or more programs per disk
VERY FAST	Reloads most programs in less than 30 seconds
NOT NEEDED	The cartridge is not needed for loading back
UPGRADABLE	Cartridge uses RAM and disk based software for instant low cost upgrading
MONITOR	Use the machine code monitor to cheat, gain extra lives or restart the program, etc.
JOYSTICKS	It has a joystick auto-fire mode and joystick port swap feature

WARNING: It is illegal to use the EXPERT for the reproduction of COPYRIGHT material.

WE MAKE YOU THE EXPERT

DISTRIBUTED BY:

HOME ENTERTAINMENT SUPPLIERS PTY LTD

UNIT 1/128 BONDS RD, RIVERWOOD NSW, 2210. FAX (02) 534 6421 PH (02) 533 3679

Computer Spot

MAIL ORDER

Front 13 Gibbes Street.
East Chatswood, NSW 2067

Phone (02) **417 7395**

TOLL FREE (008) 25 2130. FAX (02) 417 8710

Call to check latest prices

NEW AMIGA 500 STARTER KIT

- Amiga 500
- Kindwords
- Fusionpaint
- 3 games
- TV modulator

SAVE! $110

$889 (MONITOR NOT INCLUDED)

Actionware light phaser gun	$49.95
Commodore Amiga A590 — 20 Meg Hard Drive	$999
RAM Upgrade to suit A590, per Meg	$299
Amiga 500 ½ megabyte RAM	$299
1084M Monitor, full colour	Call
Philips Colour Monitor From	$399
Amiga Modulator, connect A500 to TV	$59.95
Compatable Amiga Drive	$229
1010 Disk Drive, second drive for A500 and A1000	$239
California Access CA880 Disk Drive	$279
Perfect Sound II for A500/A2000 sound digitising	$259.95
Mini Genlock	$399

AMIGA A590

20 MEG SCSI, AUTO BOOT
OPTIONAL RAM UPGRADE
ALREADY FORMATTED JUST PLUG IN AND GO.

$999 — SAVE! $100

HARD DRIVES
TRUMP CARD A500/A2000

SCSI Interface, Auto Boot, 18 Millisec

42 meg + Controller	$1499/1399
84 meg + Controller	$1995/1895
Optional Trump Card RAM, 512K, 1 Meg, 2 Meg	Call

Accelerator processor, increases Amiga to 14 MHz	**$399**
Amiga 2000	**$1995**
Amiga 2000 with colour monitor From	$2394
A2000 PC-XT Emulation (bridgeboard) with 512K RAM, 5¼ inch Drive + MSDOS	$999
AT Bridgeboard inc. 1 meg PC RAM	$1995
A2000 Hard Drive Controller 2090A	Call
A2000 8 Meg Board with 2 Meg installed	$999
A2000 Internal 3.5" Drive	$299
PC Hard Disk Card 33 Meg + Controller	$799
Flicker Fixer Card (A2000)	$899
Amiga Mouse 1352	$89.95
Winner Mouse	$99
Genlock, A8802 from Rendale	$899
Mini Gen Genlock	$399
Quinto professional genlock	$2995
Midi Interface A2000/A500	$149.95
Digiview Gold (Amiga Digitiser)	Call
Digiview Golds with AWA Camera + lens	call
Trump card SCSI H/D controller for A2000	$399
Amiga 2000 40 Meg Hard Card	$1399
Perfect Vision, video frame grabber	$599
Easyl Graphics Tablet A2000	$799

COMMODORE 64/128

1541 Disk Drive	$299
Compatible Drive	$299
C64 Datasette	$59.95
1802 Monitor	$299
Commodore C64 Sports Pack	$299
Movie Pack (incl. D/Drive)	$599
Commodore Pro Pack	$579
1351 Mouse for 64/128	$89.95
Magic Mouse	$59.95
Netcomm 64/128 Modem 1200/75 and 300 baud communications	$229
Xetec Interfaces CBM serial to centronics, Junior	$129
Senior, with 8K buffer	$199
Gold, with 32K buffer	$279
64 Power Supply	$54.95
Freeze Machine back up cartridge	$129.95
Final Cartridge II	$139.95
Action Replay Mk 4	$149.95

COMMODORE PC's

PC 30 AT, 20 Meg Hard Disk, EGA Colour Monitor	$2995
PC 30 AT, 40 Meg Hard Disk, EGA Colour Monitor	$3295
PC 40 AT, 20 Meg Hard Disk Shop Demos	$1995
PC 10 Series III, 4, 8, 10 MHz	$1399
PC 10 Series III + 33 Meg Hard Disk	$1995
PC Colt, dual drive, 640K RAM	$999
TTL green hi-res Monitor	$199
1084M Colour Monitor	Call
Joystick cards for PC	$39.95
Joystick for PC from	$39.95
Witty Mouse	$89.95
DMS Mouse Kit, with mat + software	$149.95
JT Fax, turns your PC into send and receive fax machine	$899
Handi Scanner, copies pictures onto your PC screen	$499
Cordless Mouse (NEW)	$149.00

A2000 (12 months warranty)

The latest 1.3 version.
(Trade in your A500 now.)
Monitor not included.

$1995

AMAZING PRINTER VALUE!

NEW Citizen 24 pin colour sensational quality suit Amiga/PC	$799
SUPER 5 EP2000, heavy duty, 240 cps. Push pull tractor, 6K buffer. Brilliant print quality.	$499
Commodore	
MPS 1230 for 64/128 and centronics	$399
MCS 810 colour for 64/128	$299
MCS 820 colour for Amiga	$299
MPS 1280, 15" width, 9 pin. Super Value	$499
LP806 Laser	$1995
Epson	
LX850 latest full feature budget 9 pin NEW	$499
LX400 — text and graphics	$399
LQ500 budget 24 pin quality	$599
EX800 superfast 9 pin, colour option	$999
LQ850 fast 24 pin	$1199
FX1050 fast 15" 9 pin	$1199
LQ860 Fast 24 pin Colour NEW	$1399
LQ1050 fast 15" 24 pin	$1499
LQ2500 top of the line 24 pin, 15" with colour option	$1995
GQ3500 laser	$3195
Colour options for EX800/1000 or LQ2500	$139.95
Epson serial port cards from	$79.95
Star	
NX1000 9 pin — Multiple Fonts	$499.00
NX1000CL 9 pin colour	Call
NX24-10 24 pin quality	$699.00

ATARI 520 ST + 1040 ST

PRICES TOO LOW TO PRINT!
NOW WITH POWER PACK 21 SUPER PROGRAMS

ATARI ST

520ST FM Computer with 512K	Call
1040ST FM Computer with 1 Meg RAM	Call
Mega ST2 Computer with 2 Meg RAM	$2495
Mega ST4 Computer with 4 Meg RAM	$3495
Mega File 20 Hard Drive	$1295
Mono Monitor SM124	$399
Colour Monitor SC1224	$599
SF Disk Drive	$449
Philips Colour Monitor From	$399

PERIPHERALS

Avtek 2400 Baud Modem	$499
BitBlitzer modem, 1200, 300, RS232C, Auto	$399
Bitblitzer 1234E Everything to 2400 baud	$549
Citizen 5200 printer for 64/128	$399
Wico 3 way joystick	$74.95
Wico Bat Handle joystick	$59.95
Wico Redball joystick	$59.95
Wico Trackball	$49.95
Tac 2 joystick	$49.95
Quickshot II joystick	$24.95
Quickshot 113 (PC) joystick	$49.95
RS232C cables, IBM and Amiga	$39.95
Centronics cables, IBM and Amiga	$39.95
CBM serial cables 64/128	$19.95
C64/128 TV cable	$14.95
Star Cursor Joystick (3 yr warranty)	$59.95

ZOOMER JOYSTICK/YOKE

$79.95

Seagate 42 Meg Hard Disk and Controller	$599
Hardcard 33M for IBM	$699
Monitor Stand, tilt and swivel	$39.95
Printer Stand with paper tamer	$39.95
Mouse Mats	$19.95

BOOKS

Amiga Intuition Ref. Manual	$49.95
Amiga ROM Kernal Ref. Manual 1.3	$99.95
Amiga ROM Kernal Exec. Ref. Manual	$49.95
Amiga Hardware Ref. Manual	$49.95
Computer Animation	$49.95
Mastering Amiga Dos	$39.95
Inside Amiga Graphics	$39.95
C64 Programmes Ref. Guide	$44.95
C128 Programmes Ref. Guide	$59.95
Megadisk — Magazine on Disk	$19.95
Kings Quest I, II, III Hint Books ea	$19.95
Leisure Suit Larry Hint Book	$19.95
Space Quest Hint Book	$19.95
Bard's Tale I, II, III Hint Books ea	$29.95

RIBBONS

Epson GX, LX80, LX86	$14.95
LX800, FX800, FX850, RX800	$17.95
LQ500, LQ800, LQ850	$19.95
LQ1000, LQ1050	$29.95
EX800/1000 black	$24.95
EX800/1000	$34.95
Commodore 801, 802, 803, 1101, 1200, 1250	$14.95
Star etc., NX1000 black	$14.95
NX1000 colour	$29.95
NX241O	$19.95
Citizen 120D	$19.95
Olympia NP30	$14.95

STATIONERY

5¼" disks Memorex DSDD (10)	$14.95
5¼" disks No Frills DSDD (10)	$9.95
3½" disks Memorex DSDD (10)	$17.95
3½" No Frills DSDD (10)	$19.95
5¼" Disk Storage Box (100)	$24.95
3½" Disk Storage Box (40)	$19.95
3½" Disk Storage Box (80)	$24.95
Rediform A4 900 sheets carry pack	$39.95
Rediform Quarto 900 sheet carry pack	$44.95
Recycled Paper from	$19.95

NEW LEASURE SUIT LARRY 2

AMIGA SOFTWARE

Phone: 417 7395. Front 13 Gibbes Street, East Chatswood, NSW 2067

TOLL FREE (008) 25 2130

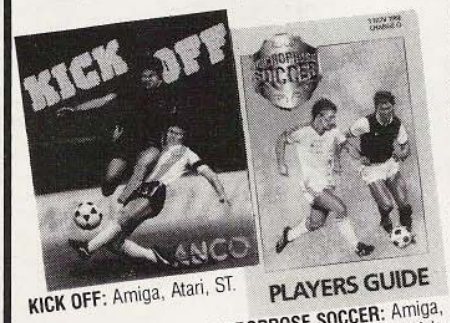
MAIL ORDER

AGC CREDIT LINE NOW AVAILABLE

AMIGA 2000 2-8 MEG BOARD $999 SAVE $300

ART

Australian Animals Col. Book	Data Disk For Any Paint Program	29.95
Caligari	Design 3d Figures , One Of The Best	320.00
Comic Setter	Make/Design Your Own Comic Strips	89.95
Deluxe Paint 3	And Now With Animation Must Get !!!!	289.95
Deluxe Photo Lab	Ham Image Processing	244.95
Digi Paint 3	Improved Ham Painting Package Brilliant	149.95
Digiview Gold	Latest To The Range Of Newtek Digitizing Packages	390.00
Fantavision	Animate Your Art	99.95
Lightbox	Animation Tool Box	284.95
Modeler 3d	Construct 3d Models Easy Then View Any Angle	89.95
Movie Setter	Create Professional Animation Titles	89.95
Optical Dreams	Clip Art For Paint Packages	29.95
Page Stream	Desktop Pub That Prints Like Laser On Dot Matrix	299.95
Photon Paint 2	For Those How Paint With Ham !!!!	224.95
Photon Video Cell	New Animation Tool	209.95
Printmaster Plus	Design & Print Signs Cards Etc	59.95
Publishers Choice	Complete Desktop Kit Less The Printer	199.95
Video Scape 3d	3 D Animation Pack	350.00
Videoscape 3d	Animate 3d Objects	99.95



KICK OFF: Amiga, Atari, ST.

MICROPROSE SOCCER: Amiga, Atari, ST, Cass/Disk.

ACTION ARCADE

Action Fighter	Control A Combat Vehicle	54.95
Airbourne Ranger	Arcade Soldier	64.95
Arcade Classics	Arcade Classics	74.95
Barbarian 2 Palace	One/two Player Violence	64.95
Basketball	How Good Are Your Slam Dunks	74.95
Batman Caped Crusader	A Legend Returns	69.95
Batman Movie	Another Joke From Ozisoft	69.95
California Games	Wish They Could All Be California Games	44.95
Capone	Great Light Gun Shoot'm'up	54.95
Cosmic Pirate	Very Fast Shoot'em Up	54.95
Dark Side	Watch Your Those Tricks & Traps	59.95
Double Dragon	The Arcade Hit	54.95
Dragon Ninja	Lastest To Martial Arts Game	69.95
Eliminator	Blast'em Type Game	49.95
Emerald Mine 2	It Just Gets Better & Better	69.95
Fiendish Freddy	Six Zany Games Of Circus Excitement	74.95
Flying Shark	From The Acarde	54.95
Forgotten Worlds	Classic Space Shoot'em Up	59.95
Grand Monster Slam	Monster Style Soccer	69.95
High Steel	Build Your Own Skysraper	54.95
Indiana Jones Temple Of Doom	Most Dangerous Adventure Yet !!!	74.95
Jaws	Shark Attack	54.95
King Arthur	Infocom Adventure Base On Arthur's Day	69.95
Licence To Kill	007 Action	54.95
Master Ninja	Kick Your Way Thru Many Levels	29.95
Mr Heli	Arcade Conversion	69.95
Netherworld	Great Graphics	59.95
P.O.W.	Great With A Gun	54.95
Pacmania	Not Space Invaders	59.95
Paper Boy	Test Your Paper Delivery Skills	54.95
Prison	Good Combination Arcade /Strategy	49.95
Rally Cross	Test Your Rally Driving Skills	54.95
Red Heat	Russia & Usa Spies Combine In Some Action Arcade	59.95
Renegade	Punch & Kick Your Way Thru The Suburbs	59.95
Return To Genesis Fs	Super Back-out Game	19.95
Rick Dangerous	Fun Acarde Action (brilliant)	54.95
Robo Cop	Computer Version Of The Movie	69.95
Rodeo Games	Western Version Of Winter Games	69.95
RVF Honda	As Good /or Better Super-hang-on ??	69.95
Shinobi	Lastest Samurai Game	59.95
Shoot Em Up Construction Set	Create Your Own Arcade Hits	64.95
Side Arm	Classic Shoot'em Actindon	24.95
Sidewinder	My Favorite Space Shoot'm'up	34.95
Silk Worm	Looking For A Good Arcade Game,try This One !!! 64.95	
Space Harrier	More From The Arcade Collection	49.95
Story So Far -1	Buggy Boy,ice Palace,battleships,ikari Warriors 49.95	
Super Hang On	Better Then Going To Phillip Island (Motor Bikes)	59.95
Targhan	Hot Arcade Adventure	49.95
Test Drive 2 Cars	Bored With Standard Cars: Get Some More	44.95
Test Drive 2 Scenery	Go Somewhere Different	44.95
Three Stooges	Another Cinemaware Classic	74.95
Two Up Fs	Computer Wersion Of The Great Aussie Game	9.95
Xenon 2	Fast Coin-op Quality Destructive Action	64.95
Xybots	Two Player Action	54.95
Zany Golf	Different To Your Standard Leaderboard	59.95

ADVENTURE

Bards Tale 2	Continuation of Bards Tale2	54.95
Deja Vu 2 Lost In Los Wegas	The Adventure Continues In The Casio Capital	74.95
Gold Rush	Another Graphic Adventure From Sierra	69.95
Journey To Centre Of Earth	From The Book	59.95
Kristal	Hottest On The Shelves Since Elite	74.95
Legend Of Sword Fs	Graphic Adventure Cheap	29.95
Leisure Suit Larry	Adults Only Graphic Adventure	59.95
Rocket Ranger	Cinemia ware Classic	74.95
Sentinel	3d Adventure Action	24.95
Tintin On The Moon	Cartoon Adventure	69.95
Universe 3	Diplomatic Adventure	74.95
Willow	The Adventure Comes To The Computer	74.95
Zak Mckracken	New Adventure From Lucasfilms	59.95

BUSINESS

Accountant	Manage Your Dollars Home/work	440.00
Aegis Draw 2000	Cad Package	149.95
Diga	Great Comms Package	124.95
Excellence	The word Processor For Amiga	490.00
Gpterm	Comm's with Wiatel	99.95
Intro Cad	Super High Quality Printouts!	149.95
Maxiplan Plus	Top Spreadsheet	269.95
Pen Pal	Lastest, Greatest Word Processor. Includes Dbase	254.95
Scribble	Quality WP	114.95
Ultracard	Hypercard Comes To The Amiga	89.95
Vizawrite	Desktop Wordpro' with Fonts	219.95
3D Graphics Disk	Source Code From Book On Disk	24.95

EDUCATION

Aesops Fables	Improve Your Childs English	34.95
Amiga Basic Inside & Out Disk	A Must For Those Reading The Book	24.95
Amiga C For Beginners Disk	Time Saving Disk To Match Book Frm Abacus	24.95
Amiga Dos Inside & Out Disk	Source Files From The Book	24.95
Amiga Graphics In & Out Disk	Source Code From Book	24.95
Amiga Machine Language Disk	Source Code From The Book	24.95
Amiga More Tricks & Tips Disk	Save Alot Of Time,suits Book Of The Same Name	24.95
Amiga System Prog. Guide Disk	why Double Handle If There All Ready On A Disk	24.95
Amiga Tricks & Tips Disk	Source Code From The Book	24.95
C For Advanced Prog. Disk	Improve Your C Programming	24.95
Chicken Little	Learn To Read Educational	34.95
Deluxe Paint 3 Help	Tutorial For Dpaint3 Users	39.95
Discovery Data Disk	Extra Problem's. Data Disk For Discovery Range	34.95
Discovery Maths	Maths Action Game	69.95
Discovery Spelling	Spelling Game Arcade	69.95
Funschool Series	Six Games Full Of Learning -6, 6-8, 8+ Versions 59.95	
Intellitype	Typing Tutor	54.95
Kinderama	Educational Preschool Age	69.95
Little Red Hen	Reading Educational	44.95
Match It	Match Shapes And Colours,for The Young	49.95
Math A Magician	Maths Educational For Kids	49.95
Math Wizard	Maths Fun	69.95
Mavis Beacon Teaches Typing	-1 Typing Tutor	79.95
Read A Rama	Reading Program	69.95
Sim City	Control The Living Standards Of Model City	74.95
Spellbound	Quality Educational Spleeling	59.95
Where In World Is Carmen Sandi	Geographical Hide & Seek	69.95
Word Master	Speling Game For Kids	69.95

BATTLE CHESS: Amiga, PC, C64 Cass/Disk.

VETTE: Amiga, PC, Atari, ST.

HOME

Desktop Budget	Maintain Personal Buget Using Icons	99.95
Desserts Cookbook	A Database Of Dessert Recipes	34.95
Home Accounts	Balance Wisa/bankcard And The Gas Bill	79.95
Joker Xword	Scrabble Type Game	9.95
Kind Words	Quality wordpro/supports Fonts	99.95
Personal Accounts Plus	Watch where The Dollars Go!	69.95
Textcraft	Budget WP	44.95
Variety Cookbook	Cookbook Database	34.95

MUSIC

Advanced Midi Sampler	Lastest Midi	300.00
Audio Master 2	Improved Samplier	149.95
Deluxe Music Construction Set	Composition Editor	194.95
Music X	The Best In Sequence Controll Software	410.00
Sonix	Music Editor	109.95

SPORT

International Karate Plus	Great Karate Simulator	44.95
Jack Nicklaus Golf	Partner 18 Holes with Jack	69.95
Kick Off	Best Soccer Sim. Available	54.95
Tv Sports Football	Enjoy Gridiron ?? Get This	74.95
Wayne Gretzky Hockey	Brilliant !!! Hours & Hours	49.95
World Class Leader Board	-1 Golf Game	44.95
World Tour Golf	Equal -1 Golf Game	54.95

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

SIMULATOR

3d Pool	Superb Pool Playing Simulator	54.95
Champ	Boxing Simulator	69.95
F16 Combat Pilot	The Fighting Simulator	69.95
F16 Falcon	Brilliant Flight Sim. 16 Missions	89.95
F16 Falcon Mission Disk	More Missions For F16 ;Tanks Fuel Dumps More	59.95
Fa18 Interceptor	Excellent Flight Simulator	54.95
Ferrari Formula 1	Action Action Action	54.95
Grand Prix Circuit	Lastest Racing Car Simulator	69.95
Gunship	Helicopter Sim. Best Around For A Long Time	54.95
Hunt For Red October	Submarine Strategic warfare	49.95
Lombard Rally	Car Rally Racing	69.95
Nigel Mansels Grand Prix	Test Your Driving Skills Against The Best	54.95
Silent Service	Fantastic 3d Submarine Sim	54.95
Test Drive 2	wow !!! Cars - Tracks - Driving At Its Best	59.95
Turbo Cup + Car	Drive A Porche	79.95

STRATEGY

Archipelagos	Great Strategic Arcade Adventure	54.95
Balance Of Power 1990	Improved Game On Old Wersion	74.95
Battle Chess	3d Animated Chess	69.95
Battletech	A Must For Any Board Game Player	69.95
Bloodwych	One Or Two Player Role-playing Fantasy	69.95
Chessmaster 2000	Best Quality 3d Chess Ever	54.95
Colossus Chess	Beats Chessmaster 7 Ot Of 9	44.95
Demons Winter	Dugeons & Dragons Just Keeps Going	54.95
Dungeon Master	D & D For Amiga	69.95
Elite	A Must Have For Any Collection. Flight/Strategy	69.95
Empire	Supurb Strategy	49.95
Heroes Of Lance	D & D From Ssi	54.95
Lord Of Rising Sun	Lastest Cineaware : Nippon Defender Of The Crown	74.95
Millennium 2.2	Manage & Maintain A Space Station	59.95
Omega	Design And Test Your Own Tank	59.95
Populous	Control ,build ,destroy Your Own world	54.95
Solitaire	Collection Of Nine Card Games	49.95
Starglider 2	Similar To Elite	54.95
War In Middle Earth	Brillant !!! Adventure !!! Arcade !!! Stratgey !!!	54.95
Waterloo		69.95

UTILITIES

A Talk 3	Comms Package,script Files ,ARREXX, more	119.95
Amiga Disk Drives Inside/out	Helpful Disk To Save Time Suits Abacus Book	24.95
Amiga Dos Tool Box	Tools And Utilities From Abacus	99.95
Amiga Enhancer Pack	1.3 Dos	29.95
Amiga Term	Cheap Comm's	14.95
Arexx	Programing Language	89.95
B.A.D.	Speed Disk Access By Cleaning Up Disk	89.95
Devpac	Lastest Compiler For Assem.	164.95
Dos 2 Dos	Convert Ibm/amiga Files	94.95
Elan Performer	Display Your Pictures with Style	99.95
Fine Print	Improve Your Printer Output	84.95
Flight Simulator Scenery Disk	Japan,europe,usa	49.95
Hot Disk	For Adults Only !!!!	19.95
Jumpdisk	Mag On A Disk	14.95
Killer Virus	Seen Better Pd Wirus Killers	19.95
Marauder 2	Keep Those Original's Safe	74.95
Mega Dos	All The Info On 1.3 On A Disk	19.95
Megadisk	Wol. 2 Thru To 13 Available	19.95
Postscript Fonts	Pagestream Fonts A To F And 1 To 5 Avail.	59.95
Superback	Some People Should Buy This One (harddisk Anyone)	139.95
Zuma Fonts	Extra Fonts For Many Programs	24.95

C64/128 SOFTWARE

ART

	Cass.	Disk
Artist		24.95
Award Ware		39.95
Certificate Maker		39.95
Final Cartridge		139.95
Fontmaster 2		74.95
Newsroom		49.95
Paperclip Publisher		54.95
Picture Place		19.95
Print Kit		24.95
Print Power		59.95
Print Shop		74.95
Stop Press		89.95
Warp Speed		64.95

ACTION ARCADE

4 Smash Hits		44.95
6 Sizzlers	24.95	24.95
Afterburner	29.95	39.95
Alf		29.95
Arcade Muscle	39.95	49.95
Barbarian 2 Palace	34.95	39.95
Batman Caped Crusader	29.95	39.95
Batman Movie	29.95	39.95
Block Busters	9.95	9.95
Block Busters 2	14.95	14.95
Centurions		44.95
Choplifter At Midnight		19.95
Crazy Cars	39.95	44.95
Destroyer Escort		69.95
Dig Dug		19.95
Double Dragon	34.95	44.95
Dr Ruth's Good Sex Game		39.95
Dragon Ninja	29.95	39.95
Dragons Lair	29.95	34.95
Dynamic Duo		39.95
Ecp Budget Pack	9.95	9.95
Ecp Sale	9.95	9.95
Ecp Sale Ollo 1	9.95	9.95
Eliminator		54.95
Fire King		39.95
Forgotten Worlds	29.95	39.95
Galaxian		19.95
Giants	34.95	34.95
Grand Monster Slam		39.95
Hot Shot	29.95	39.95
Impossible Mission	9.95	9.95
In Crowd	39.95	49.95
Indiana Jones Last Crusade		39.95
Jaws	34.95	44.95
Junior Pac Man		19.95
Last Ninja 2	29.95	39.95
Licence To Kill	29.95	39.95
Magnetron Fs	9.95	19.95
Morpheus	39.95	24.95
New Zealand Story	29.95	39.95
Operation Wolf	29.95	39.95
Overrun		64.95
Pac Man	29.95	19.95
Pacmania	29.95	39.95
Pegasus	29.95	39.95
Pitstop 2		9.95
Pole Position		24.95
Red Heat	29.95	39.95
Rick Dangerous		44.95
Robo Cop	29.95	39.95
Rodeo Games	34.95	44.95
Running Man	29.95	39.95
Savage	29.95	44.95
Shockway Rider	29.95	34.95
Silk Worm	34.95	44.95
Snow Strike		34.95
Special Action	39.95	49.95
Story So Far Wol2	34.95	44.95
Story So Far Wol4		44.95
Super Pac Man		19.95
Supreme Challenge	24.95	19.95
Taito Coin Op Hits	39.95	49.95
Terrorpods	29.95	39.95
Three Stooges		54.95
Thunderbirds	29.95	39.95
Tri Pack		84.95
Troll	29.95	14.95
Vigilante	29.95	39.95
Wanderer		44.95
Writer		44.95
Xybots	29.95	39.95

ADVENTURE

Bards Tale	29.95	39.95
Bards Tale 2		39.95
Bards Tale 3		39.95
Bards Tale Trilogy		34.95
Fish		44.95
Heroes Of Lance		44.95
Journey To Centre Of Earth		39.95
Shiloh		44.95
Sidewize	29.95	14.95
Star Trek Promethian		39.95
Ultima 4		69.95
Ultima 5		69.95
Ultima Trilogy		69.95
Wasteland		39.95
Wizard Of Oz		34.95
Zak Mckracken		39.95

BUSINESS

Filer		39.95
Fleet System 2+		69.95
Geos		104.95
Inventory Fs		9.95
Kwik Calc		19.95
Kwik Write		29.95
M64 Creditors		69.95
M64 Stock Control		69.95
Mini Office 2	44.95	49.95
Paperclip		39.95
Planner	29.95	39.95
Practicalc Fs		9.95
Practifile Fs		9.95
Superscript		99.95

EDUCATION

Funschool Series	24.95	29.95
Keyboard Cadet		19.95
Keys To Typing		39.95
Magic Maths		19.95
Math Blaster		69.95
Mavis Beacon Teaches Typing		69.95
Numbers Count		19.95
Opposites Attract		19.95
Race Car Rithmetic	19.95	39.95
Sim City		54.95
Spell It		99.95
Stick Reading		69.95
Stick Reading Compre		69.95
Type		39.95
Where In Europe Is Carman Sand		64.95
Where In The USA Is Carmen Sandi		59.95
Where In The World Is Carmen Sandi		64.95
Word Attack		79.95

HOME

Geosman (book & Disk Set)		69.95
Home Banker		24.95
Letters For You		19.95
Paperclip		109.95
Wheel Of Fortune		34.95
3d Pool	34.95	39.95
Basketball	29.95	44.95
California Games	29.95	44.95
Game Set And Match	39.95	49.95
Games Summer Edition	29.95	29.95
Games Winter Edition	29.95	29.95
Graham Gooch Cricket	29.95	34.95
Grand Prix Tennis	9.95	14.95
International Soccer	9.95	34.95
International Team Sports		49.95
Jack Nicklaus Courses	29.95	29.95
Jack Nicklaus Golf	29.95	39.95
Kick Off	34.95	44.95
Leader Board 4 Pack	49.95	59.95
Pro Soccer Simulator	34.95	39.95
Soccer Microprose	44.95	54.95
Sports World	29.95	39.95
Summer Games 2	9.95	9.95
Summer Olympiad	34.95	44.95
World Games	29.95	9.95
World Tour Golf	29.95	29.95

SIMULATOR

19	29.95	39.95
Apaches Strike		39.95
Card Sharks	34.95	34.95
Chuck Yeagers Flight Simulator	29.95	39.95
F18 Hornet		39.95
Flight Simulations		29.95
Grand Prix Circuit	29.95	39.95
Gunship	44.95	54.95
Ogre		49.95
Project Stealth Fighter	29.95	54.95
Racing Simulations	29.95	29.95
Red Storm Rising	44.95	54.95
S.D.I	29.95	39.95
Test Drive 2		39.95
Test Drive 2 Cars		29.95
Test Drive 2 Scenery		29.95
Wec Le Mans	29.95	39.95

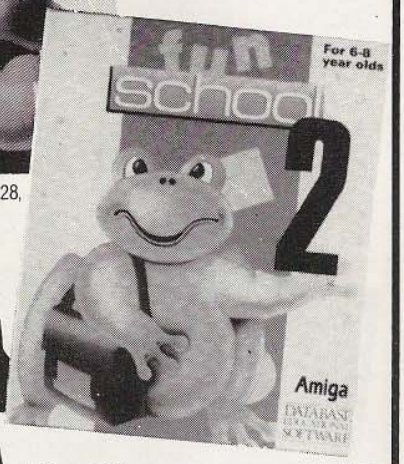
STRATEGY

Baltic 1985		39.95
Battletech		69.95
Chessmaster 2000	29.95	39.95
Citadel		39.95
Curse Of Azure Bonds		54.95
Defender Of Crown	19.95	54.95
Demons Winter		44.95
Dungeon Master Encounters		54.95
Hillsfar		54.95
Neuromancer		39.95
Omega		59.95
Pool Of Radiance		54.95
Project Firestart		39.95
Rainbow Warrior		44.95
Sinbad & Throne Of Falcon		54.95
Star Trek Rebel Universe		34.95
Steel Thunder		39.95
Storm Lord		34.95
Strike Fleet	39.95	39.95
Times Of Lore	49.95	54.95
War In Middle Earth		44.95
Wargame Construction Set		44.95

UTILITIES

64 Doctor Disk Fs		9.95
Action Replay Utility		39.95
Floppy Accelerator		69.95
Shoot Em Up Construction Set	39.95	39.95
Final Cartridge 3		139.95
Warp Speed		64.95

FUN SCHOOL 2

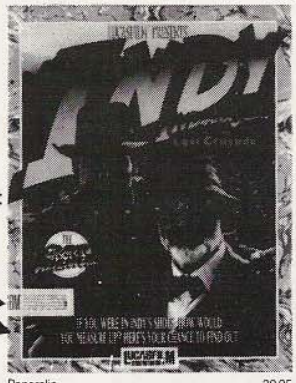


FUN SCHOOL 2: Amiga, 64/128, Atari, ST, IBM.

SILK WORM

AMIGA, C64/128 ATARI, ST.

DOUBLE DRAGON 2
HARD DRIVIN'



INDIANA JONES LAST CRUSADE: Amiga, PC, C64 Disk.

TURBO OUTRUN
SUPER WONDER BOY

BATMAN THE MOVIE: Amiga, C64 Cass/Disk.

XENON 2: Amiga, C64 Cass/Disk.

FORGOTTEN WORLDS: Amiga, C64 Cass/Disk.

NEW LEASURE SUIT LARRY 3

Computer Spot

Phone: 417 7395. Front 13 Gibbes Street. East Chatswood, NSW 2067

TOLL FREE (008) 25 2130

MAIL ORDER

AGC CREDIT LINE NOW AVAILABLE

THE AMERICAN CIVIL WAR $49.95

IBM SOFTWARE

ART

Bannermania	59.95
Newsmaster 2	154.95
Print Power	74.95
Print Shop	89.95

ACTION ARCADE

Airball	69.95
California Raisins	54.95
Capone	79.95
Captain Power	34.95
Circus Games	34.95
Crazy Cars 2	69.95
Dig Dug	19.95
Dr Ruth's Good Sex Game	54.95
Ecp Budget	19.95
Galaxian	19.95
Go Start	34.95
Licence To Kill	64.95
Pac Man	19.95
Paper Boy	54.95
Pole Position	19.95
Rick Dangerous	69.95
Robo Cop	69.95
Rodeo Games	69.95
Skweek	54.95
Space Harrier	69.95
Space Rogue	59.95
Wibarm	69.95
Zany Golf	64.95

ADVENTURE

Bards Tale	54.95
Bards Tale 2	59.95
Crossbow	69.95
Demons Winter	54.95
Heroes Of Lance	49.95
Hillsfar	69.95
Kings Quest 4	89.95
Kult	69.95
Legacy Of Ancients	64.95
Leisure Suit Larry 2	59.95
Murder In Venice	69.95
Police Quest 2	59.95
Psycho	54.95
Silpheed	59.95
Space Quest 3	59.95
Targhan	59.95
Times Of Lore	54.95
Total Eclipse	54.95
Ultima 5	79.95
Ultima Trilogy	99.95
Zak Mckracken	69.95

BUSINESS

1st Choice	89.95
Able Software	9.95
Address Book Plus	134.95
B.e.s.t. Accounting	540.00
Day By Day	79.95
Forms File	104.95
On Balance	89.95
Superbase Personal 2	390.00

EDUCATION

Crash Course Typing	74.95
Funschool Series	59.95
Joshuas Reading Machine	59.95
Keyboard Cadet	19.95
Magic Maths	34.95
Math & Me	49.95
Maxi Maths	34.95
Once Upon A Time	69.95
Once Upon A Time 2	59.95
Pactronics Educational	34.95
Pc Complete Tutorial	134.95
Pc Ms Dos Get Started	84.95
Stepping Stones	59.95
Stick Alphabet	69.95
Stick Math Plus/minus	69.95
Stick Numbers	69.95
Stick Reading	69.95
Stick Reading Compre	69.95
Stick Word Problems	69.95
Two Finger Conversion	64.95
Type	49.95
Where In Europe Is Carmen Sand	74.95
Where In Time Is Carmen Sandi	79.95
Where In World Is Carmen Sandi	74.95

HOME

Family Software Library	164.95
Go Write	34.95
Mini Office Personal	109.95
Personal Accounts Plus	69.95
Value Word	34.95

SPORT

California Games	54.95
Horse Racing	74.95
Jack Nicklaus Golf	59.95
Soccer Microprose	69.95
Tournament Bridge	79.95
World Class Leader Board	59.95
World Tour Golf	54.95

SIMULATOR

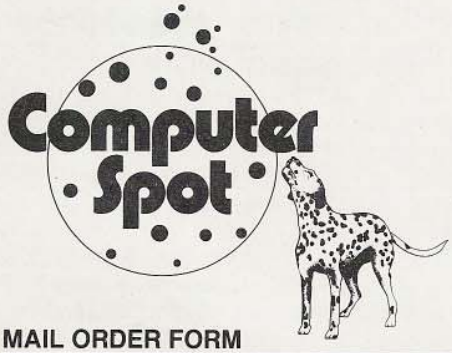
688 Attack Sub	69.95
Battle Hawk	69.95
Chuck Yeagers Flight Sim. 2	69.95
Empire	49.95
F15 Strike Eagle 2	79.95
16 Falcon	69.95
F19 Stealth Fighter	124.95
Ferrari Formula 1	69.95
Flight Simulator 3	69.95
Grand Prix Circuit	59.95
Gunship	74.95
Rocket Ranger	74.95
Test Drive 2	69.95
Test Drive 2 Cars	44.95
Vette	79.95
Wargame Construction Kit	49.95

STRATEGY

Abrams Battle Tank	64.95
Ancient Land Of Ys	89.95
Arnhem	34.95
Balance Of Power 1990	74.95
Battle Chess	69.95
Battletech	69.95
Chessmaster 2000	64.95
Chessmaster 2100	74.95
Curse Of Azure Bonds	69.95
Desert Rat	34.95
Dream Warrior	34.95
Final Frontier	69.95
Millennium 2.2	69.95
Murder Club	79.95
Omega	59.95
Operation Neptune	69.95
Pool Of Radiance	64.95
Red Lightning	69.95
Red Storm Rising	69.95
Santa Paravia	34.95
Snow Strike	44.95
Star Fleet 2	99.95
USS Stinger	34.95
Vulcan	34.95
War in Middle Earth	64.95

UTILITIES

Label Maker	69.95
On Screen DOS Assistant	34.95



CITY
Shop 3, 99 Elizabeth Street,
Sydney, NSW 2000
Phone: 221 1910

NEWCASTLE
180 Pacific Highway,
Charlestown NSW 2290
Phone (049) 42 1522

PARRAMATTA
Shop 21a, Greenway, Arcade,
222 Church Street,
Parramatta, NSW 2150
Phone 891 1170

CHATSWOOD
Shop G9, Chatswood Place,
Endeavour Street,
Chatswood, NSW 2067
Phone 419 2333

HORNSBY
35F Hunter Street,
Westfield Shoppingtown,
Hornsby NSW 2077
Phone 477 6886

BURWOOD
185 Burwood Road,
Burwood, NSW 2134
Phone 744 8809

HURSTVILLE
185E Forest Road,
Hurstville, NSW 2220
Phone: 570 73333.

PENRITH
Shop 1, Carvan Arcade,
389 High Street,
Penrith, NSW 2750
Phone (047) 32 3377

LIVERPOOL
Shop 4, Westfield
Shoppgt'n, Macquarie
St, Liverpool, NSW 2170
Phone: 601 7700.

MAIL ORDER FORM

PHONE FOR LATEST NEW RELEASES

PRODUCT/PROGRAM NAME	COMPUTER	CASSETTE/DISK	QUANTITY	PRICE

For Software only, add $3.00 for post or $10.00 for courier. For hardware, call to arrange.

Send to: Microcomputer Spot
13 Gibbes Street, Chatswood, NSW 2067

We will exercise all reasonable care in the processing of your orders but we accept no responsibility for orders, monies or products lost or delayed in transit. Your order will normally be processed within 48 hours, but please allow 14 working days for the fulfilment of orders. Telephone orders are, of course, welcome, but unfortunately, COD terms are not available. Wherever possible, please supply a phone number where contact can be made within normal working hours. **PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. DO NOT SEND CASH.**

Method of payment, tick for Cheque ☐ Postal Order ☐
Tick for Bankcard ☐ Mastercard ☐ Visa ☐ AGC ☐
Credit Card No. _____
Valid from _____ Until end _____
Name as per card _____

TOTAL $ _____
POSTAL CHARGE $ _____
GRAND TOTAL $ _____

For delivery:
Name _____
Address _____
_____ Postcode _____
Telephone (·) _____ Date Sent _____
Signature of cardholder _____

TeleCheck CREDIT LINE VISA MasterCard

Assembly Language Tutorial part 2

by Oben Candemir

THIS MONTH WE are at a level where we can learn some new commands. Remember from last month that the main principle of programming the Amiga in Assembly language is that of memory management, and moving values in and out of memory locations.

We had discussed the concept of memory in a generic and then in an Amiga specific way. This month we'll see why memory is so important and how we can do things using the processor's native 'language'.

When we discussed the Amiga's memory last month you will recall that I didn't say much about how to use memory. I will now go on to demonstrate the concept of 'Memory Locations'.

Now it's fine to say that the Amiga has 512K of memory; but where is that memory? What use is it to us if we don't know where it is? For this reason memory has a dual nature, that is that it has two parts which are equally important.

Firstly, each basic unit of memory has what is known as an 'ADDRESS'. This part of it is essential for us to be able to utilise that memory. The 'ADDRESS' is what we use to find that memory location and is exactly analogous to normal everyday post addresses. To get to a house you must first have the address!

Now it's no good just having 512K of addresses in memory; that way we'd be able to access all of the memory's locations but have no way of storing something there. And just as every post address has a house to it in which things are stored, so every memory address has a single byte of storage place associated with it. In this manner we can both access memory and write to it.

Take the following as an example. Just say that I wanted to store the value $ff in the first location in memory. I'd go about it by 'finding' the first location in memory and then 'moving' the value $ff into it. You should aim to get familiar with this concept of 'moving' values into memory.

By then accessing subsequent memory locations I can fill the whole of memory with the value $ff by 'moving' it there. This leads us to our first command. The MOVE command.

MOVE - the fundamental building block

● As its name suggests this command moves values. It is easily the most commonly used command and must be tackled first. To make it easy to understand how the move command works let's take an example in BASIC.

Say I wanted the value 7 to be put into the variable X. I would write something like: LET X=7. I wouldn't worry about what the computer had to do, to do what this instruction says. All this does is retain the value 7 in the variable X which in actuality is just a memory location.

In assembler the same effect can be achieved by directly storing the value 7 into either a data or address register, or I could store the value directly into memory somewhere. So I'd write something like:

```
MOVE.B #$7,$1000
```

The '.B' specifies that only a byte value is to be moved. I could equally put '.W' for a word value which would move $0007 (note how the computer would complete the digits) or '.L' for a long word value which would move $00000007. The '#' means that I want to store an immediate value into the memory location $1000.

The end result is a 7 deposited in location $1000. However when the Byte value is moved only location $1000 is involved in the operation; moving the word $7 means that location would hold $00 and $1001 (the next byte) would hold the $07 part.

Therefore one must be careful with the 'size specifier'. If no specifier is supplied most assemblers default to word values. So this is the immediate mode, there is another called the absolute mode which is:

```
MOVE.B $7,$1000
```

Note how we've omitted the '#' meaning that we don't want the immediate value of seven stored but rather we want one byte of what's stored in location $7 to be moved to location $1000. There really is a big difference between this and the previous mode and I hope that you all understand the difference.

Had the value at location $7 incidentally been a 7 then the instruction would have had the same effect as the first. We'll see examples of how to use both the modes of addressing later, for now let's see more modes. But to understand these other modes we must first see what registers are.

REGISTERS - the 68000's personal workspace

● We've already seen that the Amiga has RAM which is accessed by the processor through the BUS. In addition to this RAM the 68000 has internal memory called registers.

There are eight data registers D0 - D7, eight address registers A0 - A7, a status register SR, a user stack pointer USP and a system stack pointer SSP, and the program counter PC. This multitude of terms may be confusing for now but all will be revealed soon.

The data registers

● The data registers are general purpose memory and can store any size of value up to 32 bits. The main use of the registers is that they offer temporary storage to do operations on values.

The most significant advantage in the use of registers is that they carry no extra time overhead like ordinary RAM which is accessed through the Bus, and the use of registers is greatly rewarded in terms of speed. In fact most of the time you are storing, preserving and manipulating values in these data registers. In assembly we have eight data registers to work with. They are used as D0, D1, D2, ..., D7.

The address registers

● The address registers like their data

COMPUTA MAGIC PTY. LTD.

SHOP 5 30 HALL STREET, MOONEE PONDS, VICTORIA, 3039
PHONE (03) 326-0133

CHRISTMAS PRESENTS GALORE

A500 SPECIAL CHRISTMAS PACK

A500 STARTER KIT - A500 WITH 512K RAM, POWER SUPPLY, MOUSE, INBUILT 3.5 DRIVE, AND $500.00 OF SOFTWARE.

PLUS 1084 MONITOR AND PRINTER AND CABLE

(PRINTER IS MPS1230, OR MT81 DEPENDING ON AVAILABILITY)

$ 1799.00 (WHILE STOCKS LAST.)

3.5 AMIGA DISK DRIVE

This one is so hot we can't even disclose the brand name. This unit is slimline construction and normally sells for $ 299.00. 12 months warranty

NOW ONLY $ 229.00

WHILE STOCKS LAST.

SOFTWARE

E.C.P. CHRISTMAS SPECIALS

Populous or F18-Interceptor or World Tour Golf for Amiga
With Bonus Disk Box $ 45.95

Amiga 1990 Pack - 4 Disks with 5 Games on them $ 29.95

Skate Or Die, or Chuck Yeager Flight Simulator or Ugh Olympics
For C 64/128 with Bonus Joystick $ 31.95

Gold Ribbon Pack C64/128 with Bonus Red Ribbon Pack $ 24.95

TITLES AVAILABLE FROM
MINDSCAPE, QUESTOR, PACTRONICS, COMPUTERMATE, COMPUTAMART, AND OZISOFT.

ALL OUR SOFTWARE IS SOLD AT GENUINE RECOMMENDED RETAIL NOT THE INFLATED PRICES ADVERTISED BY SOME DEALERS.

SPIRIT 2-8 MB BOARD FOR A2000 NOW AVAILABLE

ARRIVING DECEMBER

REPLACEMENT AMIGA MOUSE WITH MICROSWITCH BUTTONS AND AN ECONOMY PRICE - CALL FOR DETAILS

COMPUTA MAGIC WOULD LIKE TO WISH ALL THEIR CUSTOMERS AND SUPPLIERS

A VERY MERRY AND SAFE CHRISTMAS
AND A HAPPY AND PROSPEROUS 1990

SEE YOU ALL SOON

VINCE & KERRIE MORTON

counterparts are eight in number. However the last address register ie. A7 is used as the Stack pointer and should not be used otherwise by the programmer.

The other registers may be used to manipulate and store addresses in and are generally used as pointers to data in memory, and their many modes of addressing give extra flexibilty to the coder. As the data registers were the address registers are named A0, A1, A2, ..., A7.

The Stack and the Stack Pointer A7

● The Stack is a place of large scale temporary storage. It resembles a stack of papers on your table; the last one put on is the first one to come off. This is called a LIFO type stack (Last In First Out). There are other types but we won't concern ourselves with those as the 68000 only uses the LIFO type.

When we use the stack to store things we must be careful to make sure that we take off what we put on! This is because the system also uses the stack, to save return addresses when jumping to subroutines. Saving and restoring values on the stack is commonly referred to as 'PUSHING' and 'POPPING' to/from the stack respectively.

Another point of warning is that the stack generally shouldn't be used to save byte values, the reason for this is that when accessing words and long words the 68000 expects EVEN addresses (ie. the last digit must be 0,2,4,6,8,a,c,e). Pushing one byte onto the stack makes the stack's next address odd, and when the system attempts to access the stack next it has a strong possibility of crashing!

This applies to ALL addressing regarding words and long words not just to the stack. Assemblers usually have a directive to align the current address to an even address. It usually performs this by padding the odd address with a zero.

On the Seka Assembler which I use that command is 'EVEN', on the Meta-Comco assembler it's 'CNOP 0,2' and on the Assempro it's 'ALIGN'. If yours isn't any of these then consult your manual for this function.

With that cleared up we can go on to the other important addressing modes. There is the 'data register direct' which is:

```
MOVE.B #$0A,D0
```

Note that this is the same as the immediate mode above except the destination for the move is a data register. The same is possible for an address register and is called 'address register direct':

```
MOVE.L #$00060000,A0
```

Probably the most important way of using an address register though is 'address register indirect'. To explain this let me draw on an example. Say that location $1000 had a $07 stored in it. I could access this in a 'direct' way as:

```
MOVE.B $1000,D0
```

This moves the value in $1000 (which is $07) 'directly' into D0. There is another way though:

```
MOVE.L #$1000,A0  ;Move address $1000 into A0 MOVE.B

(A0),D0  ;Move what's 'inside' $1000 to D0.
```

The brackets indicate the 'indirect' mode. Without the brackets the instruction would read MOVE.B A0,D0 ; that would simply move the address $1000 into D0. What we wanted was the contents or what's stored in the location which A0 holds (ie. $1000). And the brackets simply mean just that, that we want the value stored in $1000 to be moved into D0 not the $1000 itself.

Read over this a couple of times if you have to, because it is extremely important for later on. Note also the ';' which can be used to write a comment after the instruction for handy little reminders later on.

A variation on the indirect mode is using an 'offset'. An offset simply is a value with which to increment the address before using it. Take the above example with an offset:

```
MOVE.L #$1000,A0 MOVE.B $20 (A0),D0
```

This will do much the same as the previous example however, it will access the memory location $20 (decimal 32) bytes further than $1000. So in fact $1020 is the effective address accessed. This is specifically called 'Address register indirect with a 16 bit displacement value'. (Don't worry too much about the names as long as you understand the concept.)

On top of this mode we have another rather infrequently used mode which is 'address register indirect with an 8 bit index value'. What this means is that in addition to the 'offset' as before we can have another data register added to the address:

```
MOVE.L #$1000,A0 MOVE.B $20 (A0,D0),D1
```

This would add $20 to A0 and ALSO and eight bit value in D0 to the effective address. Say D0 contained $10 ; then it would access memory location $1030. This is $20+A0+D0.

Note that with an 8 bit value only 255 can be added in this manner. Also note that if the 'offset' of $20 isn't needed then you can replace it with 0! Easy eh?

There is another variation on this theme called the 'program-counter relative modes' but I think these are best left till after. The last two modes I want to mention here are the 'address register with post increment' and 'address register indirect with pre-decrement' modes. Two examples will demonstrate these aptly:

```
MOVE.L #$1000,A0 MOVE.B #$01,(A0)+
```

The plus here just means that the address in A0 should be incremented by one after writing an immediate $01 to $1000. So A0 would be left with the value $1001. The other way is:

```
MOVE.L #1000,A0 MOVE.B #$01,-(A0)
```

This would write a #$01 AFTER A0 was decremented by one so that the value would actually be moved to 999 (note the use of decimal here which is perfectly legal). I think this is simple enough and in fact enough for addressing modes for now.

One last point on this topic is that the latter two modes are used in management of the stack. For example:

```
....          ;Start of program

MOVE.L  #$ffff,-(SP)     ; "PUSH" onto the stack

....          ; Other stuff in here.

MOVE.L  (SP)+,D0          ; "POP" a value from the stack.
```

I think that this will make sense to everyone who has read the preamble. I want to finish off by giving you an actual program example which I'll elaborate on next issue.

Here goes . . . type in the program in a text editor or whatever you use and assemble it with your assembler (I assume that you've read your manual and are familiar at working it; if you still have trouble working the assembler then write in

a letter explaining your difficulty and I may be able to help):

Color Flash!
by O.Candemir for ACAR Magazine

```
Start:
LEA      $DFF000,A5
MOVE.W   #$0020,D1

Loop:
MOVE.W   #$FFFF,D0

Flash:
MOVE.W   D0,$180(A5)
DBRA     D0,Flash
DBRA     D1,Loop

End:
RTS

; End of code
```

Don't worry about the particulars of the code but try to recognise the modes and instructions we've learnt. More explanations next month and remember that "Practice makes Perfect". Cheerio! ❑

Roseneath Computers P/L

Freepost No.6 P.O. Box 506
Engadine 2233 Phone 520-2933

Please write or phone for a copy of our FREE Spring catalogue. In it you will find;
Tiny Tiger Hard Drives.
Minimegs Memory Expansions,
NEC, Oki, Xerox and Star Printers,
Netcomm Modems and over 1,450 of the latest programs and accessories for the Commodore 64/128 and Amiga.

All our products are sold Below Retail Price and all postage (except for printers) is absolutely FREE.

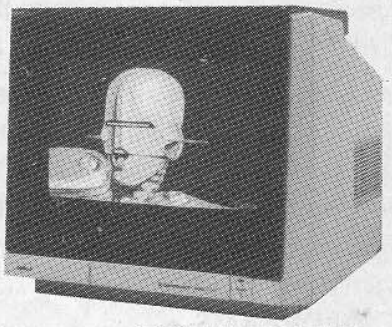
We accept payment by Bankcard,Mastercard, American Express, Cheque and Postal Order.

-NEW-

HI-TEK MONITOR FILTER

STOCK MODELS : COMMODORE 1081 : 1084S : PHILLIPS 8833 : 8854 : ATARI SC1224
ALL OTHER TYPES TO ORDER

- TOTALLY ELIMINATES MONITOR GLARE
- ENHANCES ON SCREEN COLOURS
- MAKES INTERLACE MODE TOTALLY VIABLE
- RESOLVES LONG EXPOSURE ADVERSE EFFECTS
- PROTECTS FROM R.S.I. (EYE STRAIN)
- INCREASES IMAGE SHARPNESS



OUR HIGH QUALITY FILTER IS MADE FROM OPTICAL GRADE 3 MIL ACRYLIC SPECIALLY TINTED. ITS UNIQUE FILTERING QUALITIES HAVE BEEN EXTENSIVELY TESTED AND APPROVED BY AMIGA USER GROUPS, DOCTORS, HIGH SCHOOLS AND GOVERNMENT OFFICES.

MADE IN AUSTRALIA
10 YEAR GUARANTEE

LOW COMMUNITY SERVICE PRICE **$59.95**

HARRIS HI-TEK PTY LTD
P.O. BOX 112, ERINA N.S.W. 2250 AUSTRALIA
TEL OR FAX 043 852051 - 02 671 1856
Credit Card Orders Same Day Despatch

Can't wait?"
"OK goto Australia's top Computer Retailers, Harvey Norman Discounts".

MONITOR TYPE

PAYMENT: PLEASE INDICATE METHOD ☐
VISA - MASTERCARD - BANKCARD

☐ | | | | | | | | | | | | | | | |

OR EXPIRY DATE | | |

☐ CHEQUES, PLEASE MAKE PAYABLE TO: HARRIS HI-TEK PTY LTD

PLEASE DEBIT MY CREDIT CARD

MR/MS/MRS	SURNAME	INITIALS	SIGNATURE

ADDRESS _____

_____ POST CODE _____

TELEPHONE No. IN CASE OF QUERIES _____

CHRISTMAS GIFT PACKS

DELUXE PAINT ACCESSORY SET

Includes: Australian Animals Colouring Book, Optical Dreams and The Experts Guide to Deluxe paint III. Gift wrapped for just $90.00.

HOTDISK XMAS PACK

Hotdisks 2,3,and 4gift wrapped for just $55.00.

Orders over $50.00 will receive Meltdown, a bizzare computer animation about the end of the world (well almost the end anyway) free of charge.

To order your giftpak simply circle the product required and send in this form or write indicating the product required. You can also order individual products from this coupon.

Please rush me the following products:

AUSTRALIAN ANIMALS.....$30
OPTICAL DREAMS.....$30
HOTDISK 2,3,4 Single issue.....$20. No: __
Complete Guide to DELUXE PAINT III.....$35
Scenes & Objects for SCULPT 3D.....$25
Name_____
Address_____
Postcode_____Day Phone ( ) _____
Signature_____
Bankcard No:_____
Expiry date_____ _____

Postage and packaging is included in the purchase price
We regret that Hotdisk 1 is no longer available

ARTSCAPE STUDIOS (02) 977-1829
P.O BOX 751, MANLY, NSW. 2095

CLI for beginners

by Tim Strachan

CLI examples for beginners

● THESE EXAMPLES ARE designed to give a start to anyone who is interested in getting into the CLI (Command Line Interface) or Shell. When you're through playing games, the CLI is a fascinating place to delve. To enter a CLI simply double-click on the CLI or Shell icon on your Workbench disk. When typing in the commands, make sure you type them exactly as you see them. For much more detail on all of these matters, see the Megados AmigaDos manual-on-disk.

Setting up a RAM DISK

● Particularly handy for those with a single disk drive, it will allow you to access CLI commands without having your System disk (bootup disk) in the computer, thus freeing up a precious disk drive, though taking up about 60Kbytes in the case below. You can of course copy more or fewer commands than written below, but these are the most often-used commands. Hit <Return> after typing in each line.

```
makedir ram:c
cd df0:c
copy run|copy|cd|dir|list ram:c
copy delete|execute|type|info ram:c
path ram:c add
```

A simple way to create a Batch File

● Note that you should also create a Batch File of the lines above, so that you don't have to type them in again each session. To do so, first enter:

```
copy * to df0:s/Ram disk <press Return>
```

[You will now have a line without a Prompt appearing. Type in the 5 lines above, each on its own line, and when you've pressed <Return> at the end of the 5th line, press the CTRL key together with the "\" key at the top right of your keyboard. This will bring your Prompt back, meaning you're back in the CLI as before.]

Now when you want to set up a Ram Disk in any session, simply enter:

```
Execute ram disk
```

This technique is really the equivalent of a text editor, allowing you to create Batch Files, write notes to yourself, or, to knock out quick notes or envelope addresses on your printer, redirect your typing to the PRT: DEVICE, as follows, making sure your printer is set up:

```
copy * to prt: <Return> Megadisc
P. O. Box 759,
Crows Nest  2065
```

and then again, press CTRL-\ to exit this mode. ❑

"Skweek"

and ye shall find!!!

-"The hottest game for '89!"

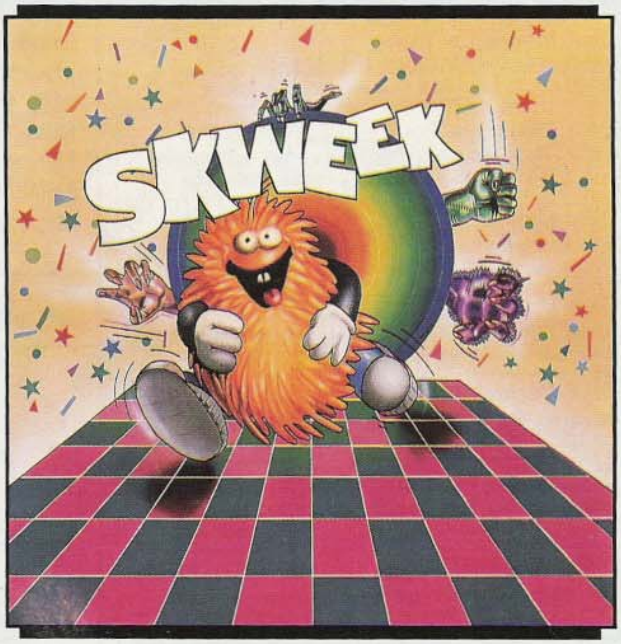
Hallelujah!!

In the beginning there was Chess, and it was good, but not that good. And Chess flourished, became popular and *begat* Checkers, which *begat* logical thought, which *begat* electronics, which *begat* computers.
Then there was the computer game, and it was better; but not by much. The computer game attracted many to evil ways of "Fun", but it soon lost its appeal, and the many strayed.

Then LORICIELS *begat* "SKWEEK", and it was fantastic! The many returned and increased manyfold. There was great enjoyment in the land, and many even forgot about *begatting* anything else.
The beginning, the end and the middle was "SKWEEK", the constant FUN and the eternal frustration. AMEN!

MAX: 1:12:4

And lo! "SKWEEK" could *begot* at Maxwells Office Equipment (VIC), Grace Bros, Myer, Harvey Norman, Computer Spot, Steve's (ACT), Westend, and ye multitude of other retailers.



Every now and then, there appears a game that has the lot; Graphics, Music, Sound FX, Action, Strategy, Puzzles and above all else, that indefinable "something" that makes you come back time after time.
"SKWEEK" is that game for 1989.
It's FAST, FUN, FRANTIC action right from the start. Simple to follow gameplay makes it instantly enjoyable and incredibly addictive.
ENJOY!

"SKWEEK" is available on AMIGA and PC (512k minimum, Graphics Card required) also on Atari ST & Amstrad CPC.

N.S.W. : Pactronics Pty Ltd, 33-35 Alleyne Street, Chatswood. (02) 407 0261
VICTORIA : Pactronics Pty Ltd, 51-55 Johnston Street, Fitzroy. (03) 419 4644
QUEENSLAND : Pactronics Pty Ltd, 12 Stratton St, Newstead, 4006. (07) 854 1982
SOUTH AUSTRALIA: Contact NSW or Victoria office.
WESTERN AUSTRALIA: Pactronics, unit 13, 133 High Rd Willeton 6155. (09) 354 1122
NEW ZEALAND: Micro Dealer NZ Ltd, PO Box 23-678, Papatoetoe, Auckland. (09) 274 9300

Pactronics

Great bargains for your C64/128!

Australian Commodore Review Disk Mags Nos 1 to 14

Disk Magazine One $10
Forest Raiders - shoot 'em up. Machine code paint, border, input and flash routines. Nice Lister. Recover It. And more.

Disk Magazine Two $10
Programs demonstrating 3D graphic plots. Terminal program. Tutorial on bits and bytes. Character editor. And more.

Disk Magazine Three $10
Hangman, Labyrinth, Calendar, Finance, Typing Practice, Roadblock, Bird Invaders. Constructabrix - education.

Disk Magazine Four $10
Graphic Workshop - complete design system - with tutorials. Typing Tutor. Directrix - disk filing. Plurals and maths.

Disk Magazine Five $10
Utilities for using Newsroom on an MPS 802 plus writing signs, printing Doodle and Printshop pictures. Centronics driver.

Disk Magazine Six $12
Games: Bert the Bug, Hangman. Demos: Space Harrier, Max Headroom, etc. Home Inventory . Graphics. Utilities. And more

Disk Magazine Seven $12
Anti-Isepic, Sledgehammer, Fast Format, Renumber, etc. For 128: Bootmaker 128/64 Utility, Convert Basics utility.

Disk Magazine Eight $12
Track and Sector, Function Keys, Unscratched, Relocatable directory. Calendars, Chequewriter. ESCOS version 2.99.

Disk Magazine Nine $12
C64: 14 graphics and music demos, Little Invoicer , Sprite Clock, Sprites in the Border, games, utilities and graphics. C128: 128 Disk Filer, 128 Block Reader, Three music programs.

Disk Magazine Ten $12.95
Cup challenge - sailing simulation. Define your function keys. Compiled Appointment Manager. Escos with Music. Othello Look-alike. And more.

Disk Magazine Eleven $12.95
80 Characters, Graphic Converter, Batch line number deleter, Function key definition, System call locator. Fix directory, Text search, Disk tidy, Drive aligner. Geos printer drivers. More.

Disk Magazine Twelve $12.95
Appointment Manager 2.1. Third Term - comms program. Panes - windowing system. Atlantis - undersea fast action shoot-em-up. Circle Navigation, Education Programs, Music.

Disk Magazine Thirteen $12.95
Charles and Stowaway - adventures. Blackjack. Graphic Converter. Disk Diskassy - Disk utility. Disk Label Maker, Icon Changer. Easy DOS. Cruncher BASIC. Calc. Font Diskassy.

Disk Magazine Fourteen $12.95
Electronic CAD Package. Software Cataloguer. Character Thief. Pointer C64. Best single disk file copier. Never ending scrol. SEQ file readert. CompuPage - game.

To: Australian Commodore Review, 21 Darley Rd, Randwick, NSW 2031. (02) 398 5111.

Please send me Disk Magazine(s) No(s): .....

.....

I enclose Cheque / Bankcard / MoneyOrder

Bankcard No:.....

Expiry Date.....

Signature.....

Name (print).....

Address.....

.....Postcode.....

Please add $2 for post and packing

MEGADISC

TO MAKE THE MOST OF YOUR AMIGA

MEGADISC was designed to help you really learn how to use your Amiga. Tutorials, articles, reviews, hints and tips, useful software, and much more are included to help both the beginner and the veteran to use the Amiga more productively. Not too serious and not too lightweight, MEGADISC entertains you while you learn. Available as single issues, subscriptions of any 3 or 6 issues (past or future), or as a TRIAL PACK, including MEGADOS, our Amiga Manual-on-Disk and MEGADISC 12, and our Catalogue-on-disk. If you get a TRIAL PACK, you can subscribe later for the lower rate mentioned below. Megadisc subscribers get lower prices on all our products, including our 950 public domain disks.

MEGADISC 13 IS NOW AVAILABLE

NEW Special offers!

THE ENTIRE MEGADISC SERIES

Order MEGADISC 1-12, MEGADOS and 4 free Public Domain Disks for $160 !
(You can order your PD disks later.)

BEGINNER'S PACK - 3 DISK SET

Best of MEGADISC, Best of PD Utilities, Best of Graphics and Games in ***special disk box*** for $29

MEGADOS

AmigaDos Manual-on-disk, with all you need to know about CLI, Workbench 1.2, 1.3 and ARP and more $19.95 **Price for current subscribers** $13.95

TRIAL PACK

MEGADISC 12, MEGADOS, AND CATALOGUE-DISK for $29

PAST AND CURRENT SUBSCRIBERS - RE-Subscribe for less!

$45 instead of $50 for a 3-issue subscription (free PD incl.)
$80 instead of $90 for a 6-issue subscription (free PD incl.)

PUBLIC DOMAIN DISKS FOR $5.50 each, $4.50 for subscribers

All these 950 disks are fully described on the free Catalogue-Disk

PD 10-Pack (10 selected PD disks) $55

GET OUR 'GAMES PACK' - 10 Disks full of Games - $55

3 Disk Animation Set $15 - AntiVirus Disk $5.50

WE ALSO TAKE BANKCARD , MASTERCARD and VISA ORDERS BY PHONE OR FAX

CONTRIBUTIONS OF ANY KIND ARE MOST WELCOME - PLEASE CALL

Non-Subscribers: Please add $2 P & P if ordering Public Domain disks only

I enclose a Cheque/Money Order for ..... or please charge my Creditcard
Mastercard/Bankcard/Visa No: ..... Exp: .....
Please send me: Catalogue-on-Disk AT NO COST: ..... TRIAL PACK $29 .....
ANY 6 issues of MEGADISC for $90 (please specify): ..... [$80 for re-subscribers]
ANY 3 issues of MEGADISC for $50 (please specify): ..... [$45 for re-subscribers]
MEGADISC 1-12 and MEGADOS and 4 P.D. disks for $160: .....
The 4 free PD disks I want (2 in the case of a 3-issue sub) are: .....
OR please send your Catalogue-on-Disk now and I will choose the remaining disks later: .....
10-DISK GAMES PACK for $55: .....PD 10-Pack in box for $55 .....
BEGINNER'S PACK (3 DISK SET for $29) .....
MEGADOS *AMIGA DOS MANUAL-ON-DISK* FOR $19.95.....FOR CURRENT SUBSCRIBERS $13.95 .....
3 DISK ANIMATION SET for $15 ..... ANTIVIRUS DISK for $5.50 .....
Signature:_____
Name: _____
Address: _____
Postcode: _____ Telephone: _____ Date: _____

Send to: MEGADISC, P O BOX 759, Crows Nest 2065.
Telephone: (02) 959 3692 (all hours) FAX: (02) 959 3525

Maxwell's 24 HOUR MAIL ORDER

SOFTWARE ☆ GALORE

GUARANTEED SERVICE ☆ SAME DAY DESPATCH*

SOFTWARE . . . FIRST WITH THE LATEST . . . NEW TITLES DAILY

1000's OF TITLES ☆ AMIGA ☆ IBM 5¼" & 3½" ☆ C64 ☆ C128

DATABASES

	$
MAILSHOT AMD	99.55
SUPERBASE PERS II AMD	199.95
SUPERBASE PROFESS AMD	499.00
GEOFILE 64D	99.95
KWIK FILE 64D	24.95
POCKET FILER II 64D	89.95
SUPERBASE 64D	99.95

WORDPROCESSING

EXCELLENCE AMD	495.00
PAGESETTER AMD	199.95
SCRIBBLE PLAT EDIT AMD	195.00
SMOOTH TALKER AMD	64.95
BANK STREET SPELLER 64D	44.95
BANK STREET WRITER 64D	79.95
GEO SPELL 64D	49.95
GEOPUBLISH 64D	89.95
GEOS WRITERS WORKSHOP 64D	99.95
PAPERCLIP III 64D	89.95
POCKET WRITER II 64D	89.95
SUPERSCRIPT 64D	89.95
TASWORD 64D	69.95
WORD PRO TURBO 64D	79.95
PEN PAL AMD	199.00
PROFESSIONAL PAGE AMD	599.00
PAGE STREAM FONTS AMD	64.95
TX-ED PLUS AM	129.95
HOMEWORD PLUS 64	89.95

SPREADSHEETS

ANALYSE II SPRD/AMD	149.95
MAXIPLAN PLUS AMD	249.00
SUPERPLAN AMD	199.00
GEOCALC 64D	89.95
SPREADSHEET PLUS 64D	44.95
HAICALC AMD	149.00
D.G. CALC AMD	89.95

ENTERTAINMENT

AIRBORNE RANGER AMD	54.95
ARCHIPELAGOS AMD	64.95
BALANCE OF POWER 1990 AMD	79.95
BATTLEHAWKS AMD	59.95
CRAZY CARS II AMD	62.95
DEJA VU II AMD	59.95
DUNGEON MASTER AMD	64.95
DUNGEON QUEST AMD	74.95
F-16 FALCON AMD	74.95
FACE-OFF AMD	39.95
GAUNTLET II AMD	52.95
GUNSHIP AMD	54.95
JOAN OF ARC AMD	44.95
KICK-OFF AMD	49.95
MANHUNTER NEW YORK AMD	69.95
PACMANIA AMD	59.95
PERSONAL NIGHTMARE AMD	74.95
POLICE QUEST AMD	54.95
PRESIDENT IS MISSING AMD	56.95
REAL GHOSTBUSTERS AMD	59.95
RUNNING MAN AMD	59.95
SHOGUN AMD	69.95
SWORD OF SODAN AMD	59.95
T.V. SPORTS FOOTBALL AMD	69.95
TEST DRIVE II CALIFORNIA AMD	39.95
TEST DRIVE II SUPERCARS AMD	39.95
VOYAGER AMD	59.95
WAR IN MIDDLE EARTH AMD	74.95
WHERE IN WORLD C/SANDIEGO	69.95
ZANY GOLF AMD	56.95
ZORK ZERO AMD	74.95
ADVNED TACTICAL FIGHTER 64D	39.95
ALL STAR TEST CRICKET 64D	29.95
BAAL 64D	39.95
BATTLETECH 64D	64.95
BLASTEROIDS 64D	36.95
CLUB HOUSE SPORTS 64D	49.95
CLUEDO 64D	39.95
CORRUPTION 64D	45.95
DRAGON NINJA 64D	36.95
DRILLER 64D	39.95
FAIRY TALE ADV 64D	49.95
FAMILY FEUD 64D	29.95
FISTS & THROTTLES 64D	29.95
HATE 64D	36.95
HUMAN KILLING MACH 64D	39.95
IMPOSSIBLE MISSION II 64D	29.95
KENO 64D	32.95
MICROLEAGUE WRESTLING 64D	52.95
MONOPOLY 64D	36.95
NEUROMANCER 64D	36.95
RENEGADE III 64D	36.95
SCRABBLE 64D	39.95
STAR TREK III Rebel Univ 64D	36.95
SUPER HANG ON 64D	39.95
WHERE IN EUROPE CARMEN 64D	59.95
WHERE IN USA IS CARMEN 64D	64.95
JACK NICKLAUS GOLF AMD	59.95
KING ARTHUR AMD	59.95
RED HEAT	49.95
KINGDOMS OF ENGLAND	72.95
SKWEEK AMD	49.95
STEVE DAVIS SNOOKER AMD	44.95
SIM CITY AMD	74.95
CHESS MASTER 2100 64D	39.95
ROBOCOP AMD	59.95
POWERDROME AMD	59.95
INDIANA JONES LAST CRUS 64D	39.95
CHARIOTS OF WRATH AMD	59.95
CITADEL 64D	39.95
HOSTAGES 64D	39.95
TANGLED TALES 64D	49.95
DAILEY DOUBLE AMD	49.95
FALCON MISSION AMD	49.95
RICK DANGEROUS AMD	56.95
CURSE OF AZURE BONDS 64D	49.95
NEW ZEALAND STORY AMD	59.95
SUPER SCRAMBLE AMD	59.95
THUNDERBIRDS AMD	59.95
SLEEPING GODS LIE AMD	59.95
F-16 COMBAT PILOT AMD	64.95
F.O.F.T.	79.95
LICENSE TO KILL AMD	49.95
LORDS OF THE RISING SUN AMD	69.95
RVF HONDA	49.95
MURDER IN VENICE	59.95
STORY SO FAR V.2	49.95
3D-POOL	49.95
G.NUS	49.95
KULT	59.95
GRAND MONITOR SLAM	59.95
XYBOTS	49.95
XENON II	59.95
SHINOBI	44.95
REACH FOR THE STARS	44.95
SPHERICAL	59.95
GOLD HITS	68.96
DAILY DOUBLE HORSE RACING	49.95
RAVAGE	64.95
BARBARIAN II	59.95
GEMINI WING	49.95
JIGSAW	59.95
JAWS 64	59.95
POPULOUS DATA	45.25
SNOW STRIKE 64	29.95
DYNAMITE DUX	59.95
DOUBLE DRAGON II AMD	TBA
ASTEROTH AMD	52.95
BEACH VOLLEYBALL AMD	54.95
BATMAN THE MOVIE AMD	59.95
BEYOND ICE PALACE AMD	44.95
CASTLE WARRIOR AMD	69.95
DRAGONS LAIR II AMD	99.95
F/S II SCENERY DISKS AMD	49.95
EYE OF HORUS AMD	74.95
HARD & HEAVY AMD	59.95
IT CAME FROM THE DESERT AMD	74.95
LEONARDO AMD	49.95
LANCASTER AMD	49.95
MEGABLAST AMD	59.95
NEVER MIND AMD	59.95
NIGEL MANSEL GRAND PRIX AMD	49.95
NAVY MOVES AMD	42.95
RALLY CROSS AMD	49.95
STEIGAR AMD	62.95
STORM TROOPER AMD	79.95
SCRABBLE DELUXE AMD	49.95
TARQHAN AMD	59.95
TINTIN ON THE MOON AMD	59.95
TAROT MASTER AMD	49.95
WHERE IN USA C.SANDIEGO AM	79.95
WIDE WORLD OF SPORTS AMD	49.95
A.P.B. AMD	49.95
GLOBAL TREK AMD	39.95
T.V. SPORTS BASKETBALL AMD	TBA
SWORDS OF TWILIGHT AMD	59.95
CHESSPLAYER 2150 AMD	54.95
GOLD RUSH AMD	64.95
DUNGEON MASTER EDITOR AMD	49.95
EMPIRE AMD	44.95
BEYOND DARK CASTLE AMD	59.95
SPACE QUEST III AMD	59.95
CHASE HQ AM	59.95
MOONWALKER AM	59.95
TURBO OUTRUN	59.95
GHOULS & GHOSTS	59.95
STAR WARS TRILOGY 64	39.95
EA SUPER PACK 64	29.95
TAITO COIN-OP HITS 64	TBA
SPORTS WORLD 88 64	TBA
BODY TRANSPARENT	TBA
OIL IMPERIUM AM	59.95
MYSTERY OF THE MUMMY AM	49.95
STRIDER AM	49.95
FIGHTING SOCCER AM	49.95
TERRY'S BIG ADVENTURE AM	49.95
BOMBER AM	59.95
TUSKER AM	59.95
POWERDRIFT AM	59.95
GHOSTBUSTERS II	59.95
GALAXY FORCE AM	59.95
POWERDRIFT AM	59.95
ULT GOLF/SHARK ATTACK AM	59.95
CADAVER AM	59.95
DYNAMIC DEBUGGER AM	59.95
BLADE WARRIOR AM	59.95
FINAL BATTLE AM	59.95
INTERPHASE AM	59.95
TERRARIUM AM	59.95
ADIDAS GOLDEN SHOE AM	59.95
CABAL AM	59.95
UNTOUCHABLES AM	59.95
LOST PATROL AM	59.95
OPERATION THUNDERBOLT AM	59.95
F-29 RETALIATOR AM	59.95

EDUCATION

CALCULUS AMD	79.95
MAVIS BEACON TCHS TYPING AD	79.95
PRE-CALCULUS AMD	79.95
PROBABILITY AMD	79.95
TRIGONOMETRY AMD	79.95
ADVENTURES IN EUROPE 64D	49.95
ADVENTURES IN N AMERICA 64D	34.95
CHARLIE BROWNS ABC 64D	24.95
FUN SCHOOL ages 6 64D	29.95
FUN SCHOOL over 8 64D	29.95
FUN SCHOOL under 6 64D	29.95
KEYBOARD CADET 64D	19.95
KEYS TO TYPING 64D	34.95
LEARN THE ALPHABET 64D	19.95
LEARN TO ADD 64D	19.95
LEARN TO SPELL 64D	19.95
LOGO 64D	79.95
SNOOPYS READING MACH 64D	24.95
SPEEDREADER II 64D	79.95
ALGEBRA I/II/III	39.95
EDUC. PROG ON CART.	29.95
BODY TRANSPARENT 64	44.95
READ & RHYME AM	69.95
DISCOVERY MATHS/SPELL	TBA
LOGO AMD	180.00

BUSINESS

DESKTOP BUDGET BUSIN AMD	99.95
HOME ACCOUNTS AMD	69.95
WORKS PLATINUM EDITION AMD	399.00
CHEQUEBOOK 64D	24.95
GEODEX 64D	99.95
M64 CREDITORS SYSTEM 64D	100.00
M64 DEBTORS PACKAGE 64D	100.00
M64 GENERAL LEDGER 64D	100.00
M64 SALES ANALYSIS 64D	100.00
M64 STOCK CONTROL 64D	100.00
MINI OFFICE II 64D	54.95
CASH BOOK AMD	199.00
SECURITIES ANALYST AMD	129.95
SYBIZ EASY LEDGERS	695.00

UTILITIES

AMDOS 1.3 ENHANCER PK AMD	30.00
G.O.M.F. V3 & BUTTON AMD	109.95
GFA BASIC VER 3.0 AMD	199.00
LATTICE C Ver5.0 AMD	439.00
STUFF-IT Man/Maker AMD	64.95
SUPERBACK AMD	129.95
1541/1571 DRIVE ALIGNMENT 64D	49.95
BECKER BASIC Geos compat 64D	99.95
FREEZE MACHINE/FR UTIL 64D	99.95
GEOS II 64D	99.95
GEO PROGRAMMER 64D	99.95
GEOS DESKPACK I 64D	79.95
GEOS FONTPACK I 64D	49.95
AREXX AMD	89.95
CB TREE	POA
DEVPAC 2.0 AMD	149.00
ASSEM-PRO	199.95
DOS LAB AMD	64.95
HI-SOFT BASIC	254.95
ACTION REPLAY V	149.00
FINAL CARTRIDGE III	129.95
MASTERING CLI	182.95
64 DOCTOR CART.	69.95
DRIVE DOCTOR CART.	44.95
PILOT 64	89.95
FORTRAN 64	59.95
FORTH 64	59.95
COBOL 64	89.95
SUPER PASCAL 64	129.95
SUPER C 64	99.95
QUARTERBACK 1.4	99.95
B.A.D. AM	TBA
DOS TO DOS AM	99.00

GRAPHICS/MUSIC

AWARD MAKER ED. DISK AMD	52.95
AWARD MAKER PLUS AMD	74.95
AWARD MAKER SPORTS AMD	74.95
COMIC SETTER AMD	144.95
COMBET SCI-FICTION AMD	54.95
DELUXE PHOTO LAB AMD	199.95
DIGPAINT II AMD	149.95
DIGIVIEW GOLD AMD	349.00
DIRECTOR TOOL KIT AMD	49.95
DR T's KEYBOARD CONTRO AMD	359.00
EXPRESS PAINT III AMD	199.95
JDK PRO-VIDEO PLUS AMD	519.00
MY PAINT AMD	74.95
PHOTON PAINT II AMD	199.95
PROFESSIONAL DRAW AMD	285.00
ADVANCED MUSIC SYSTEM 64D	99.95
ARTIST II 64D	79.95
CADPAK 64 ABACUS 64D	69.95
CERTIFICATE MAKER 64D	69.95
HOME VIDEO PRODUCER 64D	69.95
NEWSROOM 64D	49.95
PRINTSHOP 64D	69.95
PRINTSHOP COMPANION 64D	59.95
PRINTSHOP GRAPHICS LIB 1 64D	49.95
VIDEO TITLE SHOP 64D	39.95
MUSIC X AMD	399.00
FUTURESOUND 500 AMD	399.00
DESIGN 3D AMD	139.00
DELUXE PAINT III AMD	269.95
CO MIDI MINI IFACE	199.00
DR T's THE COPYST AMD	399.00
ELAN PERFORMER AMD	89.95
AEGIS STARTER KIT AMD	199.95
SCULPT 3D DESIGN DISKS	59.95
SCULPT 4D JNR	259.00
PURE COLOUR	45.95
VIVA AM	299.00
TURBO SILVER AM	249.00
TOP FORM DESIGNER AM	120.00

SPECIAL INTEREST

FAMILY TREE AMD	89.95
G.P. TERM V4.0 AMD	99.95
AUDIO/VIDEO CATALOG 64D	14.95
PHOTOS/REC DES/MOVIES CB64D	9.95
RECIPES 64D	14.95
SECURITIES ANALYST AMD	129.95
ATALK III AMD	99.00

64 = C64 DISK AM = AMIGA PRICES CORRECT AT TIME OF PRINTING ONLY

HARDWARE . . . COMPUTERS . . . DRIVES . . . MONITORS . . . PRINTERS . . .

VER. 6 $1995

AMIGA 2000B

MACINTOSH/ XT/AT CARDS

$CALL

AMIGA 500 PACKS

10845D

$ CALL

C PC

10III EGA

30III

$ CALL

XT/AT

TURBO PC CGA-EGA-VGA HARD DISK 101 KEYBOARD

$CALL

AMSTRAD

1512, 1640, 2086, 2286, 9512

$CALL

WHAT'S NEW AT MAXWELLS . . .

AMAX MACINTOSH CARD Includes MAC chips	$595.00
PERFECT VISION FRAME GRABBER	$595.00
SUPERPIC REAL TIME DIGITISER 32,000+ colours	CALL
GVP HARD CARDS & CONTROLLERS AUTOBOOT + RAM	CALL
TINY TIGER EXTERNAL SCSI DRIVES 30/50 MB	CALL
A500 ST506 HARD DISK CONTROLLER & DRIVE KIT	CALL
A500 512 KB INT RAM & CLOCK ON/OFF SWITCH	CALL
A590 20MB HARD DISK - SCSI PORT/2MB OPT/AUTOBOOT	CALL
68020/68030 CARDS CALL	MODEMS 64/PC/AMIGA CALL

C64/C128

C64 Family Pack	$299
C64 Pro Pack	$599
1541C Drive	$349
Datassette	$49
C128D	$599
Parallel Printer I/F	$119
Parallel Printer 8K	$139
RS232 Interface	$99
Serial Interface	$145

CARDS

A2090A	$899
A2088/86 Kit	$999 /1990
A501 RAM/Clock	$299
A500 512KB RAM	$530
A500 1MB RAM	$760
A500 2MB RAM	$1220
AMIGA Drives	fr $249

PRINTERS

STAR/NEC/C/PANASONIC Pin/Col./NLQ/15" $Call

DISKS . . . BOOKS . . . RIBBONS . . . CABLES . . . JOYSTICKS . . . MODEMS . . .

BOOKS

CAD 128 BOOK	39.95
AMIGADOS QREF/C ABAC	19.95
FIRST BOOK/AMIGA	39.95
KIDS/AMIGA/COMPUTE	33.95
BARDS TL1/2/3 CLUE BOOK	24.95
AMIGA MACH LANG PROG	39.95
AMIGA DRIVE IN/OUT	54.95
AMIGA BASIC IN/OUT	46.95
AMIGA DOS IN/OUT	39.95
SECOND BOOK AMIGA	29.95
AMIGA FOR BEGINNERS	34.95
AMIGA C FOR BEGINNERS	39.95
AMIGA SYSTEM PROG GUIDE	62.95
AMIGA MACH LANG	39.95
AMIGA GRAPHICS IN/OUT	52.95
AMIGA TRICKS & TIPS	39.95
AMIGA MORE TRICKS & TIPS	39.95
AMIGA 500/2000 TECH MANUAL	64.95
ADV AMIGA/BASIC/COMP	39.95
ULTIMA III/IV/V CLUE BK	19.95
WASTELAND HINT BK AM	24.95
HOW/GET MOST/GEOS 1.2 BK	24.95
C64 USER GUIDE CBM	12.00
C64 PRG REF GDE	39.95
BLACK CLDRN HINT BK	14.95
QUEST FOR CLUES HINT	45.00
DUNGEONMSTR HINT BK	29.95
EPYX MSTR COLL HINT BK	19.95
MIGHT/MAGIC HINT BK	19.95
BIS/FAIR HINT BOOKS	14.95
ABACUS OPTIONAL DISKS	29.00

CABLES

RS232	30.00
JOYSTICK EXTENSION	20.00
MONITOR CABLES	CALL
C64 SERIAL CABLES	15.00
AMIGA PRINT CABLE	25.00
C64 RF CABLE	10.00

JOYSTICKS

AMIGA MOUSE MASTER	79.95
WICO THE BOSS	44.95
STARCURSOR JOYSTK 3Y	54.95
KONIX NAVIGATOR JYSTK	34.95
PRO 5000 JYSTK BLACK	39.95
ZOOMER	139.00
ICONTROLLER	39.95
M3 MOUSE C64	89.95
QUICKSHOT II/II/V/V	CALL
WICO RED BALL/BAT	54.95
MOUSE MATS	15.00
MY-T MOUSE 3 BUTTONS	89.95
MOUSE AMIGA/64/128	79.95
MOUSE CLEANER	50.00
MOUSE TRAP/HOLDER	10.0
MAX JOYSTICK	195.00

DISKS

MEMOREX 3.5" DS DD X 20	50.00
MEMOREX 3.5" DS DD	27.50
MEMOREX 5.25" DS DD	22.50
VERBATIM 3.5" DSDD VALUPAK	18.00
VERBATIM 3.5" DS DD DATALIFE	39.95
VERBATIM 5.25" DSDD DATALF	29.50
VERBATIM 5.25" DSDD VALULF	16.50
XIDEX 3.5" DSDD	35.50
PRECISION 3.5" DSDD	29.95
PRECISION 5.25" DSDD	16.50
DISK BOXES FROM	19.95
DISK NOTCHER	14.95
WRITE PROTECT TABS X 600	7.95

10 GREAT REASONS TO SHOP MAXWELL'S FROM HOME.

1 **TOLL FREE HOTLINE**
We offer toll free ordering outside metropolitan Melbourne, 24 hour orders line and a customer enquiries line.

2 **RELIABLE SERVICE**
*All goods despatched within 24 hours when stock is available. All queries answered A.S.A.P.. No order is too small.

3 **GREAT PRICES**
All prices quoted are correct at time of printing and we'll match any regular price advertised in this magazine.

4 **CUSTOMER PROTECTION**
Credit cards are not charged until goods are despatched. All products carry manufacturer/distributors guarantee. All computers are tested before despatch.

5 **BETTER BACK-UP**
Friendly advide and after-sales support from experienced staff. Plus special offers and priority service for existing customers.

6 **EASY PAYMENT**
We accept Bankcard, Visa, Mastercard, AGC, Money Orders, Bank Drafts and cheques. Allow ten days for cheques. Credit card users please specify full name on card, card number and expiry date.

7 **SET POSTAL RATES**
Software: $3 per item (Max. $9 per order) via Certified mail. $10 via Courier. Hardware: Call to arrange freight.

8 **REPUTABLE SUPPLIER**
Maxwell Office Equipment has been in business for 20 years. We are Commodore Australia's Dealer of the Year, and authorised Government/Education supplier and Service Centre. Maxwell's has the largest computer showroom in Victoria (and probably Australia) and carry a huge range of software, computers and accessories.

9 **UP-TO-DATE**
At Maxwell's we take pride in keeping up to date with the latest hardware and software developments so you the customer get the best advice and the newest product.

10 **MAXWELL POLICY**
Our main aim is to provide a fast, efficient and worry-free mail order service Australia-wide.

Dealer of the Year Awarded to Maxwell Office Equipment Victoria

SUPERPIC AMIGA REALTIME FRAME GRABBER $CALL

ESTABLISHED 1968

ORDERS ONLY 008-334-634 **ALL QUERIES** 03-419-6811

Bankcard VISA MasterCard TeleCheck

AFTER HOURS CALL 03-417-1480 FAX 03-419-0160

Or write to: FREEPOST 2, MAXWELL EXPRESS

162-164 NICHOLSON ST, ABBOTSFORD, VIC 3067

RETURN & REFUND POLICY All returns must have a return authorisation number. Call customer service to request a RA#. Defective merchandise under warranty will be repaired or replaced. Returned products must be complete with all original packing. We do not offer refunds for products that do not perform satisfactorily. We make no guarantees for product performance.

What the new enhanced chip set (ECS) will do for you

● Specifically, the ECS will consist of the 1 meg Agnes (already discussed in that article), and the new Denise chip. The Agnes will support rectangular blits (ie movements of graphics due to the "Blitter") of up to 32K x 32K, meaning better graphics, to keep it comprehensible.

The Denise chip will provide new screen resolutions and more Genlock capabilities.

● SuperHires mode: will give you 1280 horizontal pixels on a standard display.

● Productivity mode: will give you 640 x 512 (or more) non-interlaced screens with up to 4 colours on a multi- or bi-sync monitor. All the current modes will still be supported.

Denise will also allow four Genlock modes:

● CHROMAKEY, allowing any colour register to control the video overlay (as distinct from colour 0 only at present)

● BITPLANEKEY, allowing any bitplane to enable video overlay

● BORDERBLANK, creating a transparent "frame" surrounding the active area of the screen

● BORDERNOTTRANSPARENT, making an opaque surrounding the active area of the screen.

Hi res colour graphics card

● Said to be in the pipeline, called the A2360, will give resolutions up to 1024 x 1024 with up to 259 (3 extra over VGA) colours on screen simultaneously. Features the Texas Instruments TMS34010 graphics processor, executing commands up to 6 million instructions per second (!). Palette of 16 million colours available, an high-speed DMA used to move images and commands from the Amiga to its 1.5 meg of memory. Will require an A2000 and a multisync monitor.

Professional video adaptor

● This is a combination genlock, frame grabber, and digitizer. There could be a professional paint program coming to take advantage of the features of this board. The PVA will require an A2000.

More on 2090 hard disk controller problems

● While Commodore is refusing to allow an upgrade from this to an 2090A, they are going to sweeten the pill. The 2090 won't autoboot even with the 1.3 OS available, so they're bringing out a board with an autoboot ROM that will look for the 2090 and then boot from it, taking up an A2000 Amiga slot in the process. ❑

Prime Artifax. Public Domain and Commercial Software

ORDER HOTLINE - *TOLL FREE* (008)-252 879

AMIGA

Super Workbench - Intuitive mouse, custom menus,, opening windows, Zippy CLI interface, auto-screen blanking, ARP 1.3 and more. **$8.95**
Anti-Virus PAK 10 - Catch and prevent. Detects over 40 viral strains. Full instructions. Menu driven. The most up to date protection. **$14.95.**
Disk Utilities - Track and Sector Edit, Disk Copying - nibble editor, custom bootblock. All you need for a tidy disk. **$8.95**
Catalogue Disk - Latest listing of FISH disks and all commercial programs. Hints on using public domain software.**$5.00**
JR-COMM - Communications program and compaction utilities. Boot up and your ready to go! **$6.00**
FISH Disks - Now up to 250. 1-4 Disks $6. 5-9 Disks $5.50. Order more than ten disks and pay only $5. Speedy handling of your orders!
The Advantage: The ultimate spreadsheet program! Replaces MAXIPLAN PLUS. Orders are now being taken. Don't miss out. Only **$99!**
QuarterBack: Back up your hard disk safe and sound. Supports multiple floppy drives, selected backup and restore. A must for every serious user $99
Superbase Personal: File it away. Easy to use - VCR type interface. Relation database. Expand to higher versions later on. **$79**
Diskmaster - New Version. FULL PAL screen display. Makes copying files easy. Play sound samples, view graphics, make new directories, format a disk - just point and click. Very easy to use, DUAL directory display. Recommended especially for hard drive users. **$59**
AudioMaster II - The best digitiser software. Edit samples, real-time echo and heaps more. $109.

Commodore 64

GEOS 2.0 64/128	$89
GeoWrite 64	$59
GeoWrite 128	$79
GeoPublish 64	$59

(Other GEOS titles available)

Amiga Hardware Specials
Spirit Tech. 512K RAM, Clock/Cal - $199
Quality External 3 1/2" Drive - $239

ANIMATION STATION: Touch tablet plus graphics software. Print out images on your printer. Add text to images. Many features. Tablet works with GEOS too! $139
SPECIAL: GEOS Writers PAK - GEOS 1.3, GeoWrite, GeoSpell, GeoDex, Desk Pack 1 and Font Pack 1. $139
LIGHTPEN: Works well with monchrome paint programs, GEOS and others. Includes software. $119
Xetec Super Graphix Junior: Connect a parallel printer to your C64. $119.
BOOKS, BOOKS, BOOKS, A large number of previously unavailable books are back on our price lists. These include:- C64 Advanced Machine Language, Big Tip Book, Machine Language, Peeks & Pokes, ANATOMY OF THE 1541 and ANATOMY of the C64. All are around $29-$34. CALL for advice on the best book for you!
FONTMASTER 128. Latest version, many features - flexible printer control. WYSWIG - See article by Eric Holroyd in this issue! $89
(We can order in many other productivity titles for you - just enquire when you ring, and we'll advise you of availability.)

Support : PHONE (02) 817-0011 ***Credit Card and C.O.D. accepted over the phone.***

"So easy, so convenient, plenty of choice, and the best prices."

ORDER FORM
Send cheque or money order made out to Prime Artifax, or use your credit card.

Name:_____ Day Phone:_____
Address: _____
Post Code: _____ Credit Card (tick) VISA ○ M/C ○ B/C ○
Number: ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ Exp: ❑❑/❑❑
Signature: _____
Order: _____

POST TO: Prime Artifax, 9 Augustine St, Hunters Hill 2110
(Allow $2.50 for postage air mail where possible. N.T, W.A. and S.A. are $5)

BARGAINS GALORE

from Computerscope

Amiga 500 Starter Pack	**$899.00**
Amiga 2000	**$2450.00**
Philips Colour Monitors	**$499.00**
A590 Hard Disks	**$999.00**
1011 3.5" Floppy Drive	**$199.00**
PC 30 III 40 Mb HD, EGA	**$3200.00**

NEW RELEASE GAMES

Shadow of the Beast ☆ Falcon
Lords of the Rising Sun ☆ RVF Honda
Rick Dangerous ☆ Action Fighter ☆ 3D Pool
Journey ☆ Conflict Europe ☆ Test Drive II
Bloodwych ☆ Shinobi

ASK ABOUT OUR GOLD CARD

GIVES 10% OFF

COMPUTERSCOPE

Shop G4C, Tower Sq,
155 Miller St
North Sydney
Ph:957 4690

Shop 10 Patrick Mall
Patrick St
Blacktown
Ph:831 1718

BRiWALL AUSTRALIA

We Know How to Service Our Customers!
SATISFACTION GUARANTEED

SOLID PRODUCTS & SOLID SUPPORT
P O BOX 9
RIVETT A C T 2611
24 HOUR SERVICE
PHONE: (062) 880131
FAX: (062) 880337

FRIENDLY SERVICE

BUSINESS HOURS
Mon to Friday
9AM to 4.30PM

ACCESSORIES

1750 Ram Expander	429
1351 Mouse	85
40/80 Column Switch Cable	32
Aprospan 4 Slot Cartridge Holder	45
Cover 1541	13
Cover 1571	15
Cover C128	15
Cover 64	13
Final Cartridge V3	110
Hotshot Plus Interface	143
Joystick Bat Handle	50
Joystick Ergo Stick	50
Joystick Super 3 way	65
Leroy's Cheat Sheets C64 each	7
Leroy's Cheat Sheets C128 each	14
Lightpen Model 170C	145
Lightpen Model 184C	95
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 Renew Re-ink w/no eqp	9
Serial to Serial Cable 6 ft	15
Super Graphix Gold Prntr Intrfc	229
Warpspeed 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
Basic 7.0 Internals Book	55
Basic 7.0 for C128 Book	45
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
K Jax Book Revealed 3	55
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	260
CMS Inventory Module 128	115
Chartpak 128	60
Chartpak 64	60
Datamanager 128	89
Datamanager 2 (64)	40
Fleetsystem 2 + 64	59
Fontmaster II/64	72
KFS Accountant 128	215
Leroy's Label Maker	45
Microlawyer/64	86
Paperclip 3	85
Paperclip Publisher	54
Partner 128	75
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/Sprscrpt/Book 128 Pak	130
Sprbase/Sprscrpt/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
Viziwrite 128	59

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 Dynmaic 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
Readder Rabbit	60
Sky Travel	72
Stickybear's ABC's	43
Stickybear Numbers	43
Stickybear Opposites	43
Stickybear Typing	43
Stickybear Shapes	43
Fun Biorythms	8
Morse Code	8
Numbers Show	29
Grover's Animal Adventure	15
Kidsword	69
Where in Europe is Carmen Sandiego	69
Where in USA is Carmen Sandiego	69
Where in World is Carmen Sandiego	69
Widham Classics Alice/Wonderland	23
Widham Classics Below the Root	23
Widham Classics Swiss Family Robs	23
Widham Classics Treasure Island	23
Widham Classics Wizard of Oz	23

GEOS

Becker Basic for Geos 64	72
Desk Pak Plus	45
Fontpak Plus	45
GEOS 64 v.2	89
GEOS/Programmer 64	110
Geocalc 128	95
Geocalc 64	67
Geochart 64	48
Geofile 128	95
Geofile 64	67
Geopublish 64	69
Geos 128 v2.0	100
Wordpublisher 64/128 (for Geos)	60

C64/C128

Our policy is to carry the best products available for your C64 and C128 computers. Over 400 of the best productivity, educational & technical software and a host of accessories in stock now! And CHECK OUT OUR C128 LINE! You will be amazed at the number of products that we carry for this fantastic machine.

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
Colorez 128	22
Computer Eyes	190
Create a Calendar	45
Doodle 64	60
Flexidraw 5.5/64	60
Flexifont 64	45
Graphics Arts Disk1/12 each	30
Button & Badge Maker	72
Picasso's Revenge	89
Home Designer 128	59
Home Designer/Circuit Symbol Lib	19
Icon Factory 64	50
Label Wizard	39
Newsmaker 128	43
Newsroom	39
Newsroom Clip Art Disk 1 3 each	25
PC Board Maker 64	143
Photo Finish	36
Poster Maker	39
Spectrum 128	49
Printmaster Fantasy Art Gallery	36
Printmaster Gallery 1/64	36
Printmaster Gallery II/64	36
Printmaster Plus/64	57
Printshop 64	72
Printshop Companion	50
Screen Fx	43
Sketchpad 128	39
Slideshow Creator	23
Video Title Shop w/Gr Comp 1	40

PERSONAL

Bridge 5.0	43
Cardio Excercise & Heartlab 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
Heartlab	90
Bible Search	45
Mk American Cooks Chinese	25
Mk American Cooks Italian	25
Mk Great Chefs of PBS Vol 1	25
Mk Great Chefs of PBS Vol 2	25
Mk Great Chefs of PBS Vol 3	25
Memory Academy 128	29
Micro Kitchen Companion	60
Recipe Filer	22
Cardio Exercise	120
Sexual Edge 64	43
Stress Reduction Enhanced	500
Stress Reduction Standard	170
Strider's Classic 1 - 10 each	8
Tarot 128	29

UTILITIES

1541/1571 Drive Alignment	44
1581 Toolkit	60
Assembler/Monitor/64	60
Basic 8	48
Basic 8 Toolkit	29
Basic Compiler 128	90
Basic Compiler 64	92
Big Blue Reader 64/128	65
Bobsterm Pro 64	72
Bobsterm 126	86
CP/M Kit	55
Cobol 128	58
Cobol 64	58
Gnome Kit 64/128	58
Maverick Copier V.3	50
Digitalker	39
Kracker Jax Super Cat	39
Merlin 128	100
Merlin 64	72
Oxford Pascal 128	58
Oxford Pascal 64	50
Physical Exam 1541	60
Physical Exam 1571	60
Power Assembler 64/128	60
Power C64/128	60
Programmer's Toolbox 64	29
Protoline BBS 128	58
Prototerm 128	22
Super 64 Librarian	25
Super 81 Utilities for C128	49
Super 81 Utilities for C64	49
Super Aide 64	39
Super C128	86
Super C64	86
Super Disk Librarian for C128	36
Super Disk Utilities 128	49
Super Pascal 128	86
Super Pascal 64	86
Super Snapshot 4w/C128 Disable	110
Super Snapshot V4	93
SysRES Enhanced	29
Z 3Plus	100

ENTERTAINMENT

AD&D Dungeon Master Assistance	50
AD&D Pool of Radiance	50
AD&D Hills Far	58
Alien Syndrome	50
Batman	35
Battletech	59
Captain Blood	49
Jack Nicklaus Golf	39
Galactic Frontier	15
Risk	43
Shanghai	45
Alf	24
Battleship	46
Blackjack Academy	59
California Raisins	37
Caveman Ugh*lympics	43
Chessmaster 2100	57
Crossword Magic	54
Double Dragon	39
Faery Tales	69
Jeopardy 2	25
Jordan vs.Bird	39
Main Frame	50
Monopoly	45
Neuromancer	44
Ocean Ranger	40
Operation Wolf	44
Platoon	45
Powerplay Hockey	45
Rampage	52
Roger Rabbit	35
Scrabble	49
Scruples	45
Skate or Die	39
Three Stooges	49
Ultima V	64
Wheel of Fortune 2	23
Zach Macrakin	40
Zoom	45
Monster Power	22
Moon Goddess	29
Sex Vixens from Space	43
Three Hours to Live	15
Torchbearer	15
Heroes of Lance	50
Clue-Master Detective	49
Project Firestart	45
Wheel & Deal	39

CLASSY PACKAGES AT CLASSY PRICES

BASIC 8 PACKAGE

THE TOTAL BASIC 8 SET-UP
Basic 8
Basic 8 Toolkit
How To Get The Most Out Of Basic 8

These Programmes Sold For $109
PACKAGE PRICE ONLY $79
A Saving of $30

COMMODORE 128 PACKAGE No 1

80 COLUMN FUN AND GAMES
5 Fun Programmes For The 128
Wheel and Deal
Digitalker 128
Tarot 128
ESP Tester
Memory Academy

Normal Price For These 5 Programmes is $172
PRICED TO SELL AT $99
SAVE $83

COMMODORE 128 PACKAGE No 2

PROGRAMMER'S DELIGHT
5 TOP PROGRAMMES FOR THE SERIOUS USER
Gnome Speed
Colorez 128
Digitalker 128
Super Disk Librarian
Super Disk Utilities

Originally Priced at $204 For The Lot
PACKAGE PRICE ONLY $100
SAVE $104

COMMODORE 128 PACKAGE No 3

ADVANCED USER PACKAGE
5 GREAT PROGRAMMES FOR ADVANCED USERS
Prototerm 128
Protolinc BBS 128
Digitalker 128
Super 81 Utilities 128
Colorez 128

These Programmes Originally Sold At $190
SPECIAL PACKAGE PRICE ONLY $89
SAVE $101

C64 GAMES PACKAGE

4 Great Games for the 64
Galactic Frontier
Torchbearer
Revenge Of The Moon Goddess
Eye Of The Inca

Original Price For The 4 Games Was $65
YOURS FOR THE SPECIAL PACKAGE PRICE OF JUST $35
Great value at under $9 a game

AMAZING AMIGA VALUE

Media Line Desktop & Video Package

This package contains
1. Font Disk 1
2. Animation Backgrounds
3. Clip Art Disk

Original Price for the 3 programmes was $90
PACKAGE PRICE A LOW $49
SAVE $41

MORE GREAT SOFTWARE FROM BRIWALL AUSTRALIA

Adult Fun! Brand new adventures of Brad Stallion with superb graphics and sound! Help the Captain save the planet of Erotica and rescue Princess Orgaasma!

JUST $49

ORDERS

All in-stock items shipped same day. Please allow 14 working days for delivery of out of stock items.
Should your product be faulty please return disk only & copy of receipt for immediate free replacement.
Please make cheques payable to "Briwall Australia" and mail order to:-

BRIWALL AUSTRALIA
PO BOX 9,
RIVETT ACT 2611

Prices are subject to change without notice.

The latest Amiga word processing sensation is now available

PEN PAL

only $198

Look at these features:- Flow text around graphics: View full page or close-up: Create forms: Spell check: Analyse writing style: Mail Merge: Create data bases: Labels and reports: Multiple graphics on same page: Resize and Crop images and lots lots more.

OUT NOW

SPECIAL CHRISTMAS ☆ OFFER ☆

With every order of 64/128 or Amiga software over $100

RECEIVE A FREE "CHRISTMAS CLASSICS" PROGRAMME

BRIWALL AUSTRALIA WISHES ALL OF ITS CUSTOMERS A MERRY CHRISTMAS AND A PROSPEROUS NEW YEAR

ULTRA DOS UTILITIES MODULE 1

Ultra Dos Utilities - Module 1 is the ultimate file handling and backup system for the Amiga series of computers. Ultra Dos brings the simplicity and ease of use of the Intuition operating system to AmigaDOS. Use Ultra Dos to:

- Perform virtually all AmigaDOS functions at the click of a mouse button.
- Copy/delete files from/to any legal AmigaDOS device.
- Copy by simple or complex wildcard patternsn.
- Copy by creation date, volume device or directory.
- Quickly and easily install even the most complex software on your hard drive.
- Backup valuable files on a floppy or hard drive.
- Perform whole hard drive backup with multi format feature.
- Preview and edit text files. ● Preview IFF picture files.
- Set and clear all types of file protection.

Ultra DOS utilities - Module 1 supports "batch" selection of files for copy/deletion and allows file selection across directory or volume boundaries greatly easing software installation on hard drives. Ultra DOS uses doubvle buffering for lightning fast copies. Makes all other Intuition based DOS utilities obsolete.

ONLY $69

NOW AVAILABLE IN STOCK

COMMODORE 1750 RAM EXPANDER

Turn your 128 into a power machine with 640k RAM.

Supports GEOS
Pocket Writer
Spectrum 128
Newsmaker 128
Write Stuff

HURRY - LIMITED NUMBER AVAILABLE

BRiWALL AUSTRALIA

ACCESSORIES

10' Midi Interface Cable	35
Amiga Monitor or Disk Drv Extensn	36
Cable Connector BNC M/RCA F	6
Composite Video Cable RCAM/M 6	6
Control Centrer	155
Cable Gen/1	
To Amiga 1084	62
Cover A1084	35
Gender Changer/parallel Adapter	36
Ink Black Cart. Canon 1080A	29
Ink Colour Cart. Canon 1080A	36
Ink 2oz Bottle	
Black, Cyan, Magenta, Yellow	85
Ink 5.2ml Syringe	
Black, Cyan, Magenta, yellow	11
Ink Adapters for Canon PJ1080etal	5
Joystick-Bat Handle	50
Joystick-Ergo Stick	50
Joystick-Super 3 Way	65
Lightpen for Amiga	186
Modem-Mini A1000	170
Modem-Mini A500/A2000	170
Cover A2000	50
Modem Cable 500/2000 6 feet	30
Monitor Cable Amigen to 1084	45
Mouse-Boing Optical	180
Okimate Plug N Print-Amiga 500	150
Flicker Master	29
Printer Cable 500/2000	45
Parallel Printer	
Joystick winner 770	25
Ribbons - all types (From)	12
Ribbon Renew-Re-Ink w/no Equip	12
Star NX 1000R Colour Ribbon	25

BOOKS

1001 Things to do with Amiga	30
3D Graphics Programming +	40
AMIGA C for beginners +	35
Amiga C-advanced Programmers+	45
Advanced Amiga BASIC Book	35
Machine LangProgGdeCompt	40
Amiga BASIC Inside & Out Book +	45
Amiga DOS Inside & Out Book +	35
Amiga DOS Manual	50
Amiga DOS Quick Ref Manual	30
Amiga DOS Reference Manual	50
AmigaDiskDrives Inside & Out	50
Amiga Machine Language Book	35
Amiga Programmer's Guide	35
Amiga System Prgrmmrs Guide	60
Amiga Tips & Tricks Book	35
Amiga for Beginners	35
More Amiga Tips & Tricks +	35
ROM KernelRef, incids & Auto	75
ROM KernelRefExe&Lib&Devic	55
Amiga DOS Express	50
Elementary Amiga BASIC Book	30
Inside Amiga Graphics	40
Inside the Amiga with C	45
Disks for Books +	Call

GENERAL BUSINESS

Acquisition v. 1.3	429
Professional Draw	286
Becker Text	199
Citydesk V2.0	286
Data Retrieve	105
Data Retrieve Professional	360
Excellence	359
Critics' Choice	380
Flow	143
Haicalc	86
KFS Accountant	430
Kindwords	129
Magellan	286
Maxiplan Plus	305
Maxiplan 500	239
Microfiche Filer	145
Microfiche Filer Plus	256
Microlawyer	86
Nag Plus v3.0	100
Pen Pal	198
P.H.A.S.A.R. v3	129
Pagesetter	170
Page Stream	269
Prowrite v2.0	180
Professional Pages 1.1	495
Publisher Plus	169
Reason	570
Security Analyst	89
Shakespeare	249
Superbase Personal 2	210
Tx Ed Plus	115
Word Perfect	459
Word Perfect Library	190
Works - Platinum Edition	420

EDUCATIONAL

Adventures of Sinbad	72
Aesop's Fables	72
All About America	86
Animal Kingdom (Wonders of)	55
Decimal Dungeon	55
Dinosaur Discovery Kit	55
First Letters/Words	55
First Shapes	55
Fraction Action	75
Ghostly Grammar	75
Kid Talk	55
Kinderama	75
Linkword: French	43
Linkword: German	43
Linkword: Italian	43
Linkword: Spanish	43
Logic Master	55
Planetarium	100
Math-amation (College)	86
Mavis Beacon Typing	75
Perfect Score SAT	115
Puzzle Storybook (The)	59
Read & Rhyme	75
Read A Rama	75
Smooth Talker	59
Speller Bee	59
Surgeon	72
Word Master	75

ENTERTAINMENT

AAArgh	55
Annals of Rome	55
Arkanoid	45
Awesome Arcade Pak	72
Balance of Power 1990	75
Barbarian	59
Bard's II: Destiny Knight	59
Bard's Tale I	50
Bard's II: Clue Book	25
Battle Chess	64
Alien Syndrome	59
Ballistix	50
Blackjack Academy	47
Breach	59
Bridge 5.0	50
Bubble Ghost	50
Bubble Bobble	50
California Games	69
Capone	50
Captain Blood	64
Carrier Command	70
Centerfold Squares	43
Chrono Quest	72
Clue: Master Detective	58
Craps Academy	65
Defender of the Crown	75
Double Dragon	60
Dragon's Lair	79
Dungeon Master	60
Earl Weaver Baseball	72
Empire	55
F 18 Interceptor	55
Faery Tales	70
Falcon	55
Ferrari Formula One	55
Fire Power	39
Flight Simulator 2	72
Fourth & inches	55
Gone Fish'n	65
Grand Slam Tennis	72
Hardball Baseball	65
Hole in One Miniature Golf	58
Hybris	65
Ice Hockey Super Star	72
Ice Hockey: Wayne Gretsky	72
Jet	72
King of Chicago	75
Kings Quest III	55
Knight Orc	65
Lance-a-lot	59
Last Inca *NEW*	58
Leaderboard World Class	65
Life & Death (surgical game)*	72
Lord of the Rising Sun	72
Marble Madness	55
Mean 18 Golf	55
Obliterator	58
Out Run	65
POW	50
Phasar Gun	72
Planet of Lust	49
Platoon	65
Port of Calls	72
President's Missing (The)	65
Questron 2	50
Reach for the Stars	58
Rocket Ranger	58
Roger Rabbit	58
Romantic Encounters Dome	58
Rubicon Alliance	43
SDI	75
Scrabble	58
Sex Vixens from Space	40
Sex Vixens Hint Sheets	5
Shadow Gate	72
Shanghai	58
Space Quest 2	75
Space Station Oblivion	72
Star Fleet 1	79
Star Glider 2	58
Stellar Conflict	58
Strip Poker II	47
Sword of Sodan	72
TV Sports Football	72
Test Drive	59
Three Stooges	82
Time & Magic	58
4 x 4 Off Road Racing	59
Ultima IV	60
Universal Military Simulator	72
Video Vegas	50
Virus	45
War of Middle Earth	80
Arctic Fox	30
Zak McKraken	65
Zany Gold	72
Zoom	65

CREATIVITY GRAPHICS

Analytic Art	86
Animate 3D	209
Animation Effects	72
Animation Flipper	86
Animation Stand	72
Animator	143
Award Maker Plus	80
Business Card Maker	86
Calligrapher v 1.05	186
Celebrity Cookbook	50
Comic Setter	109
Comic Setter Clip Art EACH	39
Deluxe Photo Lab	215
Deluxe Video 1.2	186
Digi-Paint V.3 (PAL)	170
Digiview 3.0	319
Digiview Gold for A500/A1000	319
Director	110
Drqw 2000	375
Express Paint v3	199
Fantavision	100
Flipside	65
Graphics Studio	86
Home Builder's CAD	259
Icon Paint	58
Media Font Products	30
IntroCAD	125
Invision by Elan Design	185
Lights, Camera, Action	125
Masterpiece Amiga Fonts/Clip Art	286
Modeler-3D	145
Page Flipper	80
Page Flipper Plus FX	240
Photon Paint	135
Animator Apprentice	428
Photon Paint Surface Disk	49
Photon Video Cel Animator	229
Photon Video Transport Controller	429
Pixmate	109
Printmaster Art Galleries EACH	43
Printmaster Plus	58
Pro Video Plus	429
Sculpt/Animate 4D	715
Sculpt 3D	140
TV Show	135
TV Text	135
Turbo Silver Plus	286
Your Family Tree	75
Video Scape 3D 2.0	250
Video Titler 1.1	215
X-Specs	200
Zoetrope	200
Zuma Fonts each	50

SOUND/MUSIC

Deluxe Music Construction	143
Dr T Copyist II	393
Dr T Drums	36
Dr T KCS v 16a	329
Dr T MT32 Voices	70
Dr T Midi Recording Studio	100
Dynamic Drums	109
Dynamic Studio v3	286
Instant Music	60
M Intelligent Music	286
Midi Magic	215
Dr T Midi Interface	100
Music x	429
Perfect Sound A1000	130
Perfect Sound A500	130
Pro Sound Designer	224
Sonix	115
Sound Oasis	143
Sound Sampler	143
Soundscape Pro Midi Studio	215
Studio Magic	143
Synthia	143
Texture	213

UTILITIES/LANGUAGES

Amax - Mac Emulator	255
64 Emulator 2/Amiga 500	86
64 Emulator for Amiga 1000	86
A Talk Plus	115
AC/BASIC v 1.3	279
AC FORTRAN	422
Amiga Workbench 1.3	43
Amikit	58
Amiga Alignment System	59
Amiga DOS Toolbox	86
Arrexx	72
Assempro	143
Aztec C Developer Compiler	429
Aztec C Professional Compiler	286
Aztec C Source Level Debugger	108
BBS PC	215
Benchmark Modula 2	259
Benchmark Modula 2 - Simp A Lang	130
Benchmark Modula 2 - IFF Library	130
Butcher 2.0	55
CAPE 68K v2.0	129
CLI Mate	58
Cygnus Ed	119
DOS-2-DOS	79
DSM	97
Diga v1.0	99
Disk-2-Disk	72
Diskmaster	72
FACC II	50
GOMF v3 with Hardware Switch	100
Gomf v3.0	50
Grabbit	42
Inova Tools	114
Lattice C + +	549
Latt C MS-DOS/AmigaDOS Cmplr	549
Lattice C V5.0 Developer Pack	429
Mac Emulator	255
Power Windows 2.5	129
Project D v1.1	72
Quarterback	95
Raw Copy v1.3	85
Super Back	129
True BASIC libraries EACH	72
True Basic 2.0	143
UltraDOS	69
Virus Infection Protection	72

AMIGA

IT IS OUR POLICY to advertise and carry the best products available at the best prices possible. OVER 700 PRODUCTS in stock now and more arriving daily!! IF YOU DON'T SEE IT LISTED PLEASE GIVE US A CALL.

Briwall Australia
P O Box 9
RIVETT ACT 2611

NAME.....PH (.....) .....

ADDRESS.....

CITY .....STATE .....POSTCODE .....COUNTRY.....

DESCRIPTION	QUANTITY	EACH	TOTAL

For complete list of products & prices, please tick ( )

BK/CARD/MASTERCARD/VISA NO: EXPIRY DATE ../../..

Cheques payable to Briwall Australia

SIGNATURE: .....

COMPUTER TYPE:: .....

SUB-TOTAL ..... $.....

POSTAGE..... $...4.00.....

GRAND TOTAL... $.....

The Mega Entertainment Section

Edited by Phil Campbell

That's Entertainment

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

Bombuzal short story competition winner

● Hidden away in the October issue was a little competition. Readers were asked to turn the list of secret pass-codes from *Bombuzal* into a short story. We had heaps of entries, but sadly there could only be one winner. Congratulations to Damian Spruce of Paddington, NSW, who is now the proud owner of a copy of *Dark Side*, kindly donated by Questor. Damian contributed the following gem.

"Oh ROSS you RATT!" said LISA, who had never been good at spelling. "I SINK you're overweacting," replied DAVE. He was so embarrassed at his speech defect that he leapt onto his BIKE of IRON, grabbed his pet BIRD who was on a LEAD, put a tape in his walkman and set out for home.

As he pedaled homewards he saw a WEED which he ran over, a VASE, which he left alone, and a valuable RING, which he took. "You PILL!" said the GIRL from whose hand he had taken the ring. "I won't move from this SPOT until you return my GOLD." As he rode away she threw a PALM tree, missing him, but dislodging an OPAL from the ring.

When he got home he put the ring under LOCK and key, singing a SONG of relief because he knew it was SAFE. He gave his bird a WORM for being good and lit his LAMP so as to read. He saw an advertisement in the ACAR which offered speech therapy in return for a gold ring. He smiled and decided he'd go there tomorrow.

Amazing space ace demo

● The sequel to *Dragon's Lair* is nearly upon us, and all I can say is "WOW." I've just been watching the *Space Ace* demo, and if the game is even half as good then it's a definite winner. With full screen animation and dramatic sound effects, the demo disk is only a whisker below the standard of the cartoons you watch on TV. Let's hope there's a bit more support for Amiga hard disk users this time though! SPACE ACE should be available by the time you read this. Don't miss it!

Batman C64 computer package

● Cashing in on recent Batmania and the Christmas rush Commodore have released a "Movie Pack". Included with the C64 are a disk drive, joystick and a software pack including *Batman*, *Ghostbusters* and Commodore's own "Productivity Package" (typing, word processing, filing and 12 utilities that are guaranteed to make the C-64 a "breeze" to use.) Look out for the Movie Pack at your local retailer.

World Sports Challenge package

● Couch Potatoes and Norms of the world take note! If the Batman pack doesn't grab you the *World Sports Challenge* package might. Along with a C64 comes a joystick and data cassette, with seventeen games that are guaranteed to keep you amused for months - they include Cricket, Basketball, Sprint Car Racing and an Olympic Games range.

It's still coming from the desert

● Mindscape's long awaited *It Came From The Desert* is still on the way - probably lost out there in the sand dunes. The official reason for the delay is that the game will be released with two "scenario" disks; you can play it two different ways. This is a great idea, as there is nothing deader than a completed Cinemaware game! Keep waiting - this one looks hot. ❑

Letters to the editor

How to reset

● I have a problem concerning the cheat for *Rygar* on the C64. What is meant by "RESET IT"? I have tried RUN STOP/ RESTORE and every other means I know to reset the program but have failed. Finally, I own a C64 and it pains me to see so many game reviews for Amiga only. Because of the good products available on the Amiga only, C64ers may need to upgrade or be left behind.

Mark Healy, Ipswich.

Ed: To "reset" your computer you will need a special button - there are a number of different types available, some built into fancy cartridges, others that simply plug in to your serial port. Try your computer shop, or look through your back issues of ACAR for information on how to build one. It's really very simple. I shouldn't say this, but you can also reset your computer by shorting together pins 2 and 6 of your serial cable with a paper clip or other suitable device. But DON'T BLAME ME if you try this and blow up half the chips in your computer! All I can say is that my system has survived all sorts of strange things - but maybe I'm just lucky. When you reset the computer - a "cold start" - you will be presented with the standard startup screen, as if you have just switched

High Scores

Amiga

Arkanoid - 976,548 Kamikaze Andy
Bubble Bobble - 1,009,000 Michael 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 J Booth
Pacmania - 556,280 Ian Malcolm
POW - 106,065 R Zagami
Sidewinder - 385,800 Ian Malcolm
Silkworm - 913,700 A J Dunstall (Heli), 474,800 T Mason (Jeep). All 11 levels completed. Can you dig it?
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 Nick Van Heeswyk
Bubble Bobble - 590,690 Chris Byrne
Fast Break - 136 to 9 Chris Byrne
Giana Sisters - 69816 Nick Van Heeswyck
Handball Maradona - Level M Nick Van Heeswyk
Ikari Warriors - 93,000 Paul Millward
Int. Karate - 113,700 Nick Van Heeswyk
Operation Wolf - 98,500 Chris Byrne
R-Type - 548,310 Nick Van Heeswyk
Robocop - 82,250 Tim Lockwood
Salamander - 235,300 Paul Millward
Street Fighter - 127,050 Chris Byrne
Target Renegade - 330,450 C Byrne

on. But never fear - your game program is still tucked away safely in memory, all ready to be modified by your POKE commands and restarted with "SYS".

Sorry about the reviews for Amiga only. What can we do? As programmers find out more and more of what the Amiga can do, the C64 is sadly left behind. We really do try to balance our coverage, but it is getting harder and harder. Start saving up for your Amiga - you won't regret it!

Pirates

● The magazine is looking excellent since the new entertainment section was included. There is now something for every reader.

I would have to say that *Pirates* by Microprose is one of the best games I've ever played. The whole game is so complex that I have become addicted to playing for up to five hours. I've compiled some hints for the game that should help beginners. Keep up the good work on an excellent section.

Paul Millward. Salisbury North, SA.

P.S. Have you thought of a classified section in your magazine? If used for the sale of computer hardware I'm sure it would boost reader participation and magazine sales. Also, the magazine's colour is a bit bland, can't colour reviews make it past the management?

Ed: Thanks for the hints and tips, Paul, and also for your suggestions about the magazine. Extra colour would be nice, I agree. Maybe one day ... ? Meanwhile, it's good to hear you're so keen on PIRATES - just make sure you get back to the real world every now and then!

Top Ten Chart

● How about a Top Ten Amiga/C64 games chart to show the best selling games across Australia. It's always interesting to see which games are performing well in the sales. Also it provides the buyer some indication as to the popular and good games (after all only good games sell, right?)

Andrew Phang, WA

Ed: Charts are a great idea. Check out our 1990 Amiga Annual (available soon) for top ten lists from every supplier. These are the games that have sold the most - but are they the best? That's another story.

Straight ASCII

● I've had an Amiga 500 for about a month now and I have really been getting some good use out of it. My friend and I have collected heaps of cheats and pokes for your magazine, and I hope you can use them in the entertainment section.

Also, would you be able to put colour pictures of some of the game screens, just to make it a little bit better? Last month was the first time I bought your magazine, and I really liked it, so keep up the good work. Finally, could you tell me what a straight ASCII text file is?

Nicholas Prokop
Berkeley Vale, NSW

Ed: Let's work backwards from the end. Most wordprocessors have the ability to save and load text in ASCII format, a standard common to almost all computers. All formatting, underlining etc is removed, but the text that remains can easily be transferred between computers. That's why we insist that all submissions on disk are stored as ASCII files - it makes it much easier for us to transfer them between our office computers.

As for colour screen shots, we'd all love to be able to do it. It's only the cost that is holding us back. We're glad you like the magazine, and we appreciate the pile of hints and tips. Some are in this month's issue, others will be used later. ❑

Amiga Hints and tips

AMIGA AMIGA AMIGA

Dragon's Lair

● Here's the next installment of Ted Albert's solution to *Dragon's Lair* - disks 3 and 4. Remember, Ted recommends using the keypad rather than the joystick for more positive control. Here we go.

Disk 3

● Whirlpools, Rapids and Cauldron (in either order).

Ye Whirlpools: When Dirk's boat approaches the whirlpool, go to the side with space to pass - either LEFT or

(continued on page 66)

Brilliant sequel to Outrun

Distributed by Ozi Soft Pty Ltd Phone: (02) 313-6444

Available now for C64, Amiga, Atari ST and Amstrad CPC computers

RIGHT. There are 4 whirlpools and the sides alternate, so your moves will be either LEFT RIGHT LEFT RIGHT, or the other way around.

Ye Rapids: If your first Whirlpool move was left, your first rapids move will also be left - and vice versa. After the whirlpools the sea goes red while the Rapids sign flashes. Wait for the sea to turn blue again - then, as soon as Dirk's boat appears (from the right) go LEFT - UP - Pause - UP.

For the next rapids, wait for Dirk again then go RIGHT, UP, Pause, UP.

Repeat for the next pair.

Cauldron Room: SLASH as soon as the Dragon's head appears - not before. Don't be tricked by the Cauldron boiling over.

Whirlpool And Rapids: again - the other way around.

Cauldron: Again as before, 1 move only - SLASH when the Dragon's head appears.

Disk 4

● As on other disks, the order may change.

Bowling Alley: Don't do anything until Dirk has appeared at the far end AND then jumped into the alley AND the red ball has passed him. Then, AS SOON as the red ball passes Dirk, jump DOWN towards yourself. Then DOWN again as each coloured ball passes - 6 down moves altogether.

Electric floors: Very tricky - concentrate! If the Knight on the far end has his sword on the RIGHT, you start LEFT (and vice versa.)

Your first move is made when the Knight's sword strikes the ground. The next moves MUST all be made WHILE DIRK IS JUMPING the previous move. The moves are (if sword is on the right):

LEFT, RIGHT, UP, LEFT, RIGHT, LEFT, RIGHT, SLASH. Hold the SLASH until DIRK lands at the feet of the Black Knight.

Phew! That should give you something to work on ... keep on practising, and stay tuned for our thrilling conclusion next month.

Nicholas Prokop, of Berkeley Vale NSW, sent the following Amiga tips.

Space Harrier

● Enter RAF on the high score table in the second last position on the table (so your previous score has to be second last). You will now have unlimited lives when you start the game.

Sword of Sodan

● Once loaded, select the Hero, then lose all lives on the first screen. Now select the Heroine, and you should have infinite players. Also, if you type RAD in the high score table and play another game you will have infinite lives.

Eliminator

● Here are the access codes to get you to level 14.

2. AMOEBA
3. BLOOP
4. CHEEKI
5. DOINOK
6. ENIGMA
7. FLITME
8. GEEGEE
9. HANDLE
10. ICICLE
11. JAMMIN
12. KIKONG
13. LAPDOG
14. MIKADO ❑

Commodore 64 hints and tips

Nick Van Heeswyck of Mount Gambier, S.A., sent us the following tips.

Giana Sisters

● Hold down the A R M and N keys to advance a level.

Thing Bounces Back

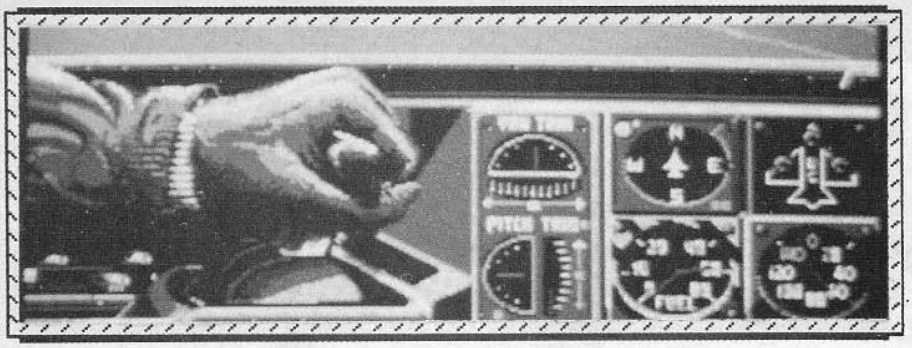
● On the title screen, type Y J O M H for infinite lives.

Lazy Jones

● Reset after loading, then enter POKE 4063, 173 followed by SYS 2061 to restart with infinite lives.

Traz

● Reset, then POKE 42200, 173 and SYS 327687 - you will now have infinite balls.



Paul Millward, from Salisbury North, S.A., contributed the following goodies.

Thunder Blade

● Load and reset, then POKE 4159 with a value between 3 and 255 for the number of lives you want - eg. POKE 4159, 100 will give you 100 lives. Then SYS 4096 to restart the game.

Pacmania

● Load and reset, then POKE 28520, 165 for infinite lives. SYS 14336 to resume.

Operation Wolf

● Do all the usual stuff, then POKE 33351, 165 for infinite energy. Restart with SYS 16963.

Paul is also something of an expert at Microprose *Pirates*. Write to him at 19 Redlynch Rod, Salisbury North, S.A. 5108 enclosing a stamped self-addressed envelope if you have any problems. ❑

LOOK! NEW PRODUCTS AND LOW PRICES FOR XMAS

THE NEW STANDARD IN AMIGA PERIPHERALS

GVP
GREAT VALLEY PRODUCTS INC.

GREAT VALLEY PRODUCTS, INC.

IMPACT A2000 68030/25 Mhz Accelerator

* 25 Mhz 32 bit Motorola 68030 offers A3000 power today
* Up to 33 Mhz 6882 floating point math co-processor.
* 8 MB state-of-the-art nibble mode DRAM design takes full advantage of the 68030 burst mode, effectively providing a zero wait-state DRAM access at 25 Mhz.
* Built-in autobooting hard disk controller. Autoboot optional.

IMPACT A2000 SCSI/2MB RAM CONTROLLER Multi-function board

* Combines SCSI controller and 2MB FAST RAM expansion on a single board.
* 16-bit DMA data transfer to on-board 16K disk buffer, providing high performance not effected by any other Amiga DMA activities.
* Autoboot feature comes standard.

THE MOST POWERFUL HARD DISKS AVAILABLE

AUTOBOOT DIRECTLY FROM HARD DRIVE. INTERNAL AND EXTERNAL SCSI CONNECTIONS. ALL PARTITIONS CAN BE FFS WITH V1.3 AUTOBOOT. CONNECT UP TO 6 SCSI PERIPHERALS. DMA DATA TRANSFER TO ONBOARD 16K BUFFER. 11/19ms AVERAGE ACCESS TIME ON 400.

IMPACT A500-HD/RAM CONTROLLER also:

* Combines SCSI controller, 3.5" hard disk drive and up to 4MB fast ram expansion for the A500 in a single, compact, snap-on unit.
* Uses its own power supply. Fully meets the Commodore specification for maximum power drain on the Amiga A500 expansion connector.
* Fully AutoConfigs both the SCSI Hard Disk Controller and the 4MB FAST RAM.

Price for 45MB/4 $1495

IMPACT A2000 HARD CARD

* High performance, combination hard card/SCSI peripheral controller on a single A2000 expansion slot.
* Available with 40, 45, 80 MB 3.5" hard disks.
* Includes the industry's easiest to install software. Automatic partitioning of hard disk or user selectable partitioning.
* Automatically reads the "capacity" of any SCSI hard disk and adapts all AmigaDOS parameters accordingly.
* External SCSI connector for connecting up to 6 external SCSI devices (7 on IMPACT A500).
* 6-bit wide Direct Memory Access (DMA) data transfers to on board 16K disk buffer provides high performance not affected by any other Amiga DMA. (blitter actiivity, overscan etc.) This high performance design supports SCSI peripherals with a data transfer rate of up to 4 MB/sec.

Price for 45MB $1195

SPIRIT TECHNOLOGY

SC501: AMIGA 501 CLONE $199

* .5 MB expansion for Amiga 500.
* Built in clock /calendar.
* Superior 4 layer, low noise board.

PLUS FREE POWER utility disk

* RAM ENABLE soft switch.
* VIRUS editors/detectors.
* Disk copiers, editors, crunchers etc . . .

IN1000: 1.5 MB for AMIGA 1000 **PRICE:** $395 for 0 k, $485 for 512 k, $575 for 1 MB, $665 for 1.5 MB

* Utilizes 256K by 1 DRAMS.
* Expandable from 0K to 0.5, 1.0 and 1.5MB
* Includes battery backed Clock/Calendar
* Full memory Auto-config with RAM on/off
* Adds up to a full 1.5 MB memory to existing Amiga RAM.

SIN500: 2 MB for AMIGA 500 **PRICE:** $395 for 0 k, $485 for 512 k, $575 for 1 MB, $755 for 2 MB

* Utilizes 1.0 Mbit (256 by 4) DRAMS.
* Expandable from 0K to 0.5, 1.0 and 2M.
* Full memory auto-config with RAM on/off.
* Adds up to a full 2 MB memory to existing Amiga RAM.
* Optional external power supply. * Motorola 68000-10 included

HDA-506: IBM HARD DRIVE ADAPTOR

* Adapts all ST-506 hard drives, MFM or RLL.
* Amiga 86-pin expansion port passthru.
* Optional 1.3 Autoboot EPROM. **$ 395.00**

8-UP! THE EIGHT MEGABYTE MEMORY CARD WITH THE AMIGA-SPECIFIC DRAM CONTROLLER LOGIC

ALL THE MEMORY SPACE YOU AND YOUR AMIGA 2000 NEED IN A MODERN, HIGHLY INTEGRATED FASTRAM EXPANSION BOARD

MicroBotics,Inc.
Great Products Since the Amiga Was Born!

PRICE: $395 FOR 0MB $755 FOR 2MB $1115 FOR 4MB $1475 FOR 6MB $1835 FOR 8MB UNBEATABLE VALUE

ORDER BY MAIL, PHONE OR CALL

Power Peripherals Pty. Ltd.
EXPANSION SOLUTIONS

68 WOODS ST, LAVERTON, VIC 3028
P.O. BOX 555 LAVERTON VIC 3028
PHONE & FAX (03) 369 7020

12 MONTHS WARRANTY ON ALL PRODUCTS
PHONE CREDIT CARD ORDERS, CHEQUE OR MONEY ORDER FOR WARDS EXPRESS OVERNIGHT DELIVERY $5
EXPERT STAFF WILL GIVE YOU ALL THE SPECS
DEALER ENQUIRIES WELCOME

SHADOW OF THE BEAST

Can it be that Psygnosis have got it right at last? ***Stuart Kennedy*** *reports on the latest from the software house famous for dazzling looking games that have never quite made it to the top.* ***Shadow of the Beast*** *may be what we've all been waiting for ...*

SOMEONE OUGHT TO invent a virus that melts Commodore 64s. The little 6502 box has been the games machine standard for way too long. Many games are written to the capabilities of the 64's VIC 11 chip and then uploaded to the 16 bit world with the just the odd bell and whistle thrown in.

The result is software stagnation. Despite years in the marketplace, 16 bit graphics hot rods such as the Amiga are still being driven by programmers like Morris 1100s on the way to Tuesday bowls.

Fortunately there are exceptions. At Psygnosis they like to push it. The first game I played from this English programming shop was the classic *Obliterator*. I never made it right through the spaceship but I remember the classy soundtrack and graphics and knockout intro which had me reaching for the Raybans as the spaceman shot plasma bolts into the screen. The bummer was the scrolling and slowish gamespeed.

Enter Psygnosis' *Shadow of the Beast*, 3.5 megabytes of code worthy of being called a true 16 bit game. *Beast* was written over nine months by Martin Edmondson and Paul Howarth, two young Englishmen who say their only interests are programming, money and fast cars.

Beast pushes the Amiga's graphic and sound circuitry. For a start it's a big game packing 2.2 megabytes of graphics data and 850 kilobytes of music and sound compressed over two disks. The game will run on a 512K one disk Amiga through a two disk boot and lots of disk access as you manoeuvre through the game's world.

The atmospheric blurb in the game manual goes something like this. Evil Beast Mages stole you as a child. Things were done to your body including force feeding with anabolic steroids and radical skull and thoracic surgery. Your mother no longer knows you after the addition of horns and giant dentures and the insertion of a second heart. Worst of all you are forced to wear a cute little blue skirt which clashes with your bright red eyes.

You serve the Beast faithfully as a warrior messenger until one day you discover the truth about your past. Wild with rage you decide to play some square up. To get at the Beast involves penetrating a world loaded with 350 screens full of 132 different monsters and numerous traps, potions and artifacts. There are plenty of opportunities for revenge along the way and thousands of ways to die ...

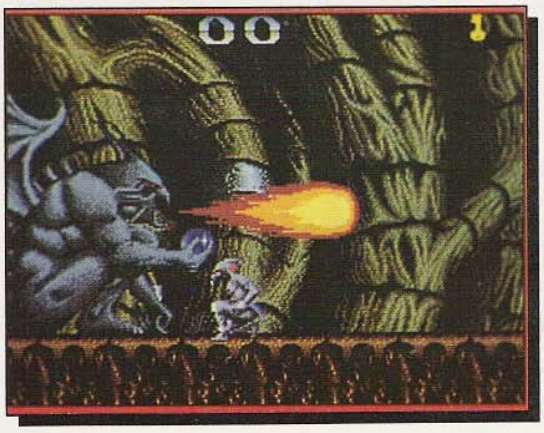
Beast combines horizontal scroll with platform sections. The game opens in a horizontal scroll landscape - along the way are entrances to a platform world underneath.

Moving the Beast character is by joystick control. He can run left or right, climb up or down, jump, punch and kick. Every encounter with a monster or trap increases the rate of his two hearts which is measured by an on-screen cardiogram - when strength drops to zero the heartbeat goes unstable and the hearts burst. Not surprisingly, death ensues.

What makes *Beast* different from a thousand other scrollers is its super smooth parallax scrolling. Screen update is at an arcade quality 50 times a second and the parallax scrolling gives the illusion of three dimensions by moving foreground sections of a screen faster than the background. There are up to 13 different levels of scrolling for some scenes and the artwork is beautiful - by using sprites rather than the blitter the programmers have managed to cram up to 128 colours on screen for some scenes. The synthesiser soundtrack is very good and adds to the atmosphere.

I enjoyed *Beast*. My only gripes are the long winded restarts after each demise and not being able to get anywhere near the Beast's lair despite a weekend of gameplay. At $79.95 including a Roger Dean tee-shirt I would welcome *Beast* into my Christmas stocking. ❑

Distributed by Mindscape
(02) 899 2277.
RRP Amiga $79.95.



We've got the lot!

Software

For C64, Amiga, ST, IBM and more

For example ...

- Hostages
- F16 Falcon
- Circus Games
- Roger Rabbit
- Leisure Suit Larry I & II
- Afterburner
- Double Dragon

The top magazines!

As well as *Australian Commodore and Amiga Review*, we have the latest US and UK magazines, including *Compute!*, *Compute's Gazette*, *Run*, *Amiga World*, *ST User*, *ST World*, *ZZAP! 64* and many more!

Accessories

Mouse Pads	$14.99
5.25" Disk Cleaners	$12.95
3.5" Disk Cleaners	$14.98
Printer Stands from	$59.95
Copy Holders from	$32.95
Anti-Glare filters from	$32.95
Assorted Cables from	$18.00
Printer Paper	CALL
Printer Labels	CALL
Photocopying Paper	CALL
Fax Rolls	CALL

Printers

STAR NX1000	$499
STAR NX1000 colour	$599
STAR NX1000 (C64)	$599
STAR NX24/10	$849

Disks

SKC 5.25" DS/DD Plastic Box	$17.95 box
SKC 3.5" DS/DD Cardboard box	$30.00 box
IAD 5.25" DS/DD Plastic Box	$19.95 box
IAD 3.5" DS/DD Plastic Box	$39.95 box
IAD 3" AMSTRAD DS/DD	$7.99 each

Nintendo Games

We have a complete range of Nintendo hand-held games such as Donkey Kong II, Oil Panic, Octopus & Parachute.
Priced from only $49.95

NEED A BOOK?

Our range is enormous. No room to list here. Call for what you want.
Calculators too!

Disk Boxes

5.25" Lockable Holds 100	$19.95
3.5" Lockable Holds 80	$19.95

Printer Ribbons

We have over 100 printer ribbons. Call for our price!

Modems

Nice Modem II	$699
Nice Modem 4	$1099
First Nice Modem C64	$299
First Nice Modem RS232	$279
PC Internal Modems	CALL

We have a complete range of Nice and Netcom modems.

Joysticks

Quickshot I	$14.99
Quickshot II	$21.99
Quickshot II Turbo	$44.99
Boss, C64	$39.95
Wico Redball	$59.95
Wico Bat Handle	$54.95
Wico Super 3-Way	$69.95
Wico, IBM PC/XT	$49.95
Wico, Apple	$49.95
Neos Mouse & Cheese, C64	$119.95
Znix Mouse, IBM	$89.95

MPA
MICRO PERIPHERALS AUSTRALIA

Telephone (03) 754 4509

Micro Peripherals Australia, GPO Box 683E
Melbourne 3001, Victoria

ALL MAJOR CREDIT CARDS ACCEPTED

FREE Catalogue!

Shinobi

***Stuart Kennedy** analyses **Shinobi**, a "pixel-for-pixel" imitation of your favourite arcade beat-'em-up. This is what he discovers ...*

ONE HOT SUMMER'S day, everything began to go wrong. As the most famous graduate of a secret oriental Ninja school, you had been invited back to the annual graduation ceremony and prize giving. Having enthralled the junior classes at the assembly with your tales of international ninjing, you were just about to move on to handing out the prizes to the seniors when there was a flash of Dark Ninja Magic and Bwah Foo made an unscheduled appearance ...

This is the introduction to *Shinobi*, a licensed knock-off of the Sega arcade game of the same name. I always read the atmosphere blurb on game instructions for three reasons - to see whether the story line bears any relation the actual game, to find clues and to be amazed at the warped and twisted imaginations of games programmers.

Shinobi is a shuriken-em-up which just about copies the arcade original pixel for pixel. However, several lines of corruption must accidentally have crept into the scrolling routines during the port because the Amiga version shakes, rattles and rolls a lot more than I remember the original coin sucker doing. Ahh well, at least this *Shinobi* only requires one up-front payment.

For those who haven't lost a few shekels playing *Shinobi* down at the local amusement arcade the gameplay goes like this. Your character Joe Musashi must complete a number of missions, penetrating deeper and deeper into the world of the Dark Ninjas who have kidnapped the entire junior class of your ninja school.

Along the way to a final confrontation with Bwah Foo, boss of the Dark Ninjas, Musashi must fight through a variety of ever more hostile urban landscapes. Completing a stage calls for rescuing the required number of baby ninjas and staying alive. At the end of every mission is an ever more difficult encounter with the dreaded Boss ninja. The clue here is that the well armored Boss ninja does not like copping a shuriken in the eye ...

Each stage has a time limit with bonus points earned for fast ninjas and death for slow ones. Joe can jump, turn, and chuck shurikens with more powerful weapons coming his way the more child ninjas rescued. Hitting the space-bar activates the once-per-stage Ninja magic which obliterates everything on the screen.

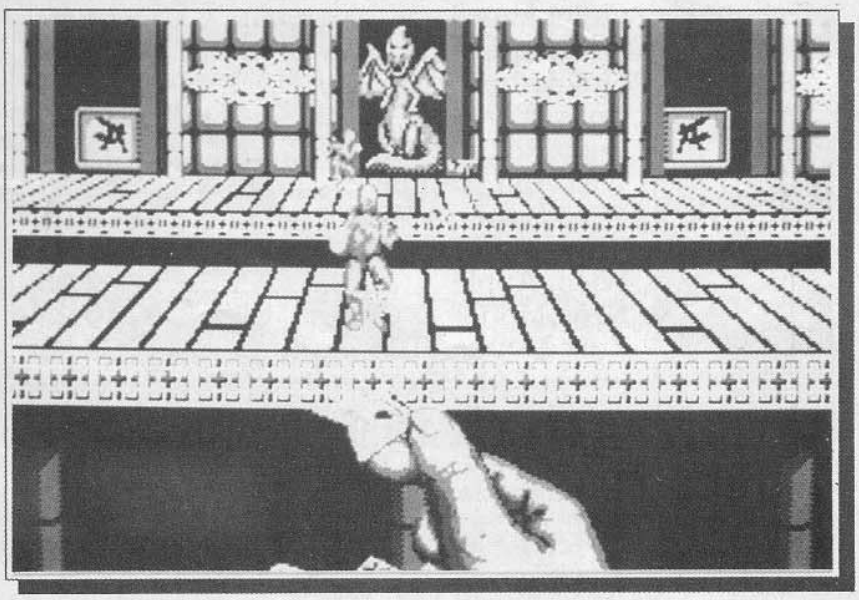
Clearing most stages involves wiping out the bad guys on the street and on the roof tops. The tricky part is level jumping between the street to the rooftops. The instructions say it is a matter of firing once then holding the fire button down and cycling the joystick up and down. I did this and had Joe bouncing crazily around the screen for half an hour while I ground down several good teeth in frustration. The trick is to just hold the fire button down and waggle the stick up and down until Joe complies.

After the ravages of a complete mission there is sometimes a bonus stage where points can be earned for shurikening a line of ninjas like ducks at a shooting gallery.

Like the arcade game, the Amiga version of *Shinobi* will allow you to hop back into a game at the level you died. Each time the game starts you are issued with three credits - hitting the fire button before a time limit expires uses a credit and puts you back where you lucked out. Being something of a joystick klutz, this saved me from putting my fist through the monitor on several occasions.

Shinobi appears to be an accurate copy of the arcade original although I was not prepared to invest a night out and pocketful of cash in a thorough investigation. My bitch with the game is that like many others of the arcade knock-off genre it seems to have been written to the Commodore 64 hardware standard and then jumped up to 16 bit land. Compared to something like *Shadow of the Beast*, Shinobi's graphics, scrolling and sound are very ordinary.

Despite being dull on the eyes, *Shinobi* is interesting enough to liven up a wet Sunday afternoon and could save a fortune in twenty cent pieces. Although at a break even of 137 40 cent games it would pay to work out how badly you need to crack this arcade classic. ❑



Review copy from Mindscape
(02) 899 2277.
RRP Amiga $54.95.
C64 disk $49.95, cass $29.95.

Rainbow Warrior

Redneck Phil Campbell checks out the first Greenie game ever.

YOU CAN PICK the fair dinkum Greenie literature these days by its distinctive brownish tint. Unbleached paper. As we all know, white paper is ideologically unsound. It has been treated with dioxins or hydrofluorocarbons or organochlorides or something else with a very long name. Even your toilet paper now arrives in a tasteful beige.

The manual packaged with *Rainbow Warrior* is slightly beige too. After all, this is the first ever environmentally friendly computer game. Released by Microprose and endorsed by Greenpeace, *Rainbow Warrior* takes you for a ride on the ecological bandwagon. Hold on to your hats.

The game has already caused something of a stir in the UK, where one Tory politician has branded it "socially irresponsible" - after all, most of the actions of the original Greenpeace protesters involved at least some level of illegality or civil disobedience. Implying, of course, that it is more socially responsible to simply sit back and watch while factories pump radioactive waste into the sea.

The men from Microprose have certainly got no qualms about the morality of their game. According to one spokesman, *Rainbow Warrior* is the first of a new breed of computer games. "It's just one of the many areas that computer games have never really explored. We're taking the issue of world conservation very seriously - and we think it's possible for computer games to express important issues very powerfully, and in an exciting and action-oriented way."

Possible perhaps. But does *Rainbow Warrior* succeed? Let's have a look.

The title screen displays a menu, with seven activities to choose from. You can block ocean pipelines as they spurt out polluting waste, you can stop ships dumping radioactive drums, you can prevent seal culling and illegal whaling, or you can tackle the problems of acid rain and ozone depletion. All in a day's work for the average member of Greenpeace. You must complete all these missions to qualify for the final challenge - "create a picture of a pollution free world and thus free the spirit of the Rainbow Warrior." Sounds weird, but unfortunately I didn't get far enough to check it out.

All the *Rainbow Warrior* sub-games are non-violent - a change from the usual "blast everything to bits" scenario.

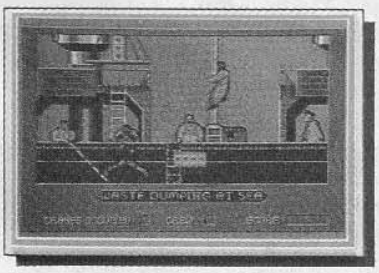
The Ocean Dumping game, for example, is based loosely on *Donkey Kong*, the standard platform and ladder hopping favourite. Climb onto a ship from your dinghy, race up a series of ladders and occupy the cranes to stop them dropping drums of radioactive waste into the sea. This is far from easy. Sailors pelt you with rubbish while you climb, and you always need to keep an eye out for falling drums.

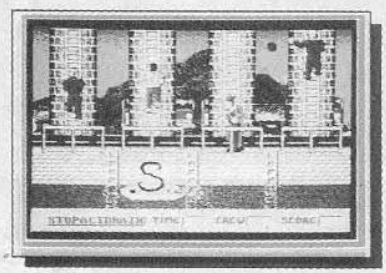
The Seal Culling game is challenging too - running around an arctic landscape dodging hunters while you try to spray the friendly seals with green dye. This makes their fur worthless, saving them from the cruel hunters, who are trying to make their fur go red instead. This game is fun, though rather difficult.

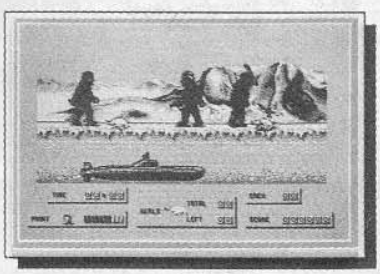
The other games on the *Rainbow Warrior* disk are of a similar standard. Some are quite imaginative, like the Whaling game - in this one, you control a whale moving along the bottom of the screen. By bouncing water balls around the screen, sections of a large picture are uncovered. Whaling ships fire harpoons at you, and other nasties do their best to wipe out your picture. This game is unique; I've never seen anything like it before. It is also extremely frustrating, so I never want to see anything like it again either.

The *Rainbow Warrior* collection is certainly unusual. Graphics are generally good, with moments of sheer excellence. Sound effects on my Commodore 64 ranged from average to annoying - I turned down the volume. As software designed both to entertain and inform, it should probably be judged a success. The off-white manual is packed full of detail, and the game raises important issues. ❑

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







Fun in the Amiga Public domain

by Phil Campbell

John Noble, of Normanhurst NSW asked for more reviews of the best Public Domain Games. How's this for service?

LET'S CALL A SPADE a spade. Computer games can be downright expensive.

Top class Amiga games can sell for up to $70.00, which puts quite a hole in the average family budget. Little wonder, then, that software piracy is so popular. Expensive programs can be copied quickly and easily at the cost of a single blank disk. Making these "pirate copies" is much cheaper than buying the product - but the fact is, piracy is illegal.

Before you set out on your life of crime, it may be worth taking a quick look at the ever growing collection of Public Domain software. These programs are "copyright free," written by authors who want fame more than fortune, and circulated around the world by an amazing network of informal contacts.

The vast bulk of Amiga Public Domain software falls into the "semi-useful" category - programming utilities and the like. Some is very high tech. Some is rubbish. And among it all, scattered far and wide, you will even find some pretty decent games.

The problem, of course, is sifting through the garbage to find the gems.

Fortunately, this is not as hard as it seems. Tim Strachan, from Megadisc Digital Publishing, has taken the time to collate a ten disk set of the best Amiga Public Domain games. Each disk is crammed with goodies - though, to be honest, some of the goodies are not all that good.

There are numerous attempts at *Reversi* (otherwise known as *Othello*), there are computer conversions of old pencil and paper favourites like *Battleships*. There is even a not-quite-finished shoot-'em-up called *Revenge of Doom*. And that is just scratching the surface.

Tetrix, on Disk 10, is my favourite - the best game in the whole collection. In practical terms, this is an exact copy of *Tetris*, a game originally developed in Russia and released commercially last year.

Gameplay is identical, although you must use the keyboard rather than a joystick. Your task is simply to pack a rectangular box with blocks that fall from the top of the screen. The blocks come in a variety of shapes and sizes - "L" shaped, "T" shaped, rectangular, and square. As they fall, the trick is to rotate them and move them left and right so they completely fill each row. As a row is completed it disappears - if you leave any gaps, the row remains, and your stack grows closer and closer to the top of the box.

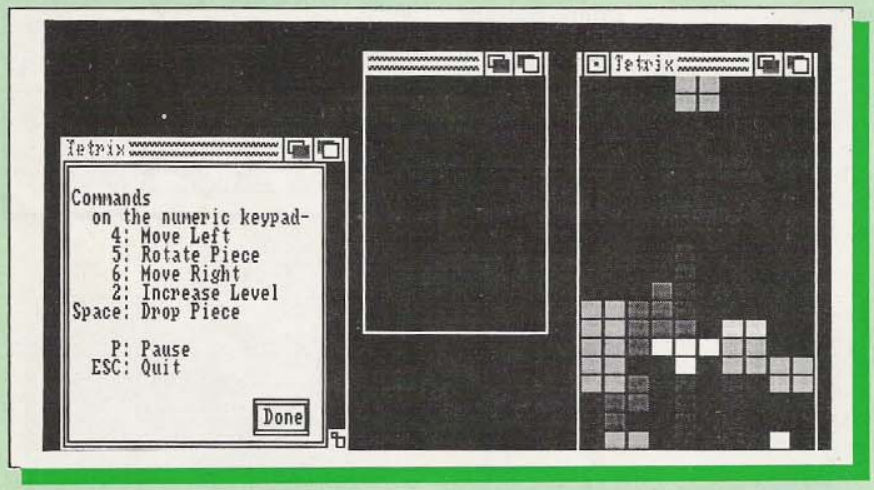
The game ends when you run out of room. That's all there is to it. Simple in theory - frustrating in practice. I managed to complete 60 rows. One of my friends has reached 90. I will keep practising, because *Tetrix* is simply addictive.

The commercial version of the game was much prettier - there were nice pictures in the background, and there was a mist of swirling, sparkling gold particles in the middle of the playing area. The public domain version, on the other hand, is as plain as a No-Frills chocolate wrapper. There are no enhancements at all. And it makes no difference. The game is every bit as exciting as the original, and if anything, a bit easier on the eyes.

Best of all, *Tetrix* - like many games in the collection - is designed to make use of the Amiga's multi-tasking capability. The game can run happily in the background while you do something more useful - simply pull down the window when you need a little relaxation.

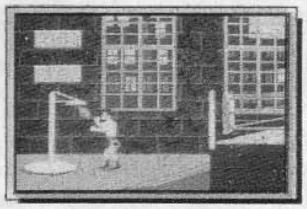
I like *Tetrix* a lot. My fellow *AC & AR* game reviewer Luke Tattersall is seriously hooked too - Luke has made it to level 100, and is keen to hear from anyone who can beat his score.

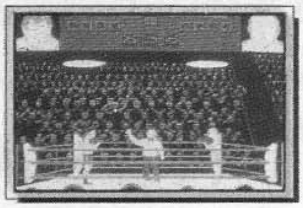
The ten disk Amiga Public Domain game collection is available from Megadisc (ph 02 959 3692) at just $55.00, or individual disks can be ordered at $5.50 each. My advice? Buy the set - even if you play each game just once, there is enough here to keep you amused for hours. ❑



Tetrix

THE CHAMP





Feel like a fight? ***Phil Campbell*** *finds that* ***The Champ*** *is a real knockout ...*

THERE ARE SOME things I will not do at any price. Like getting in a boxing ring with Jeff Fenech. Not even for all the money in the world. I am allergic to pain. Besides, I am keen to keep my brains intact - Mohammed Ali might still have a beautiful face, but he's certainly shaken a few ROM chips loose somewhere.

Vicarious pugilism is much more appealing. All the thrills, and none of the pain. I have just gone a couple of rounds in the electronic ring, and I'm not even punch-drunk. I'm playing *The Champ*, a neat new Amiga game from Pactronics.

If first impressions count for anything, this game is a winner. The opening sequence is absolutely dazzling. The screen display is richly detailed, and the sound effects are rivetting. A digitally recorded voice rises over the chanting of a huge crowd - "Ladeez and Gentlemen . . . Welcome. Tonight we present to you . . . *The Champ*." The theme from *Rocky*, fully orchestrated, swells in the background, as a huge boxing glove moves across the screen.

Great stuff. An introduction like this cannot fail to put you in the mood for some serious boxing.

Suddenly, though, the scene changes as the game begins. Gone are the huge crowds. Gone are the adoring fans. You are left standing in a desolate back alley, face to face with the neighbourhood strong man. After all, you didn't think you could start at the top, did you? First you have to establish a reputation. Win this bout, then move on to the gymnasium for some serious training. Then you will have the chance to try out for your first professional bout.

The Champ fits easily into the well-worn beat-'em-up genre of computer games - waggle your joystick in different directions to move, hit or defend yourself. There are 16 possible positions, and if you intend to do well, you should learn them all. I could remember just three punches - an effective straight left, a right hook, and the uppercut "killer". I used them when I needed them, and improvised with the rest.

My alleyway opponent, to be honest, was a pushover. He was sluggish, he had poor footwork, and he was a slow learner. My uppercut floored him every time. A little training in the gym polished up my skills - skipping requires good joystick co-ordination, the sandsack will test your punching combinations, and the punchbag will help you improve your speed.

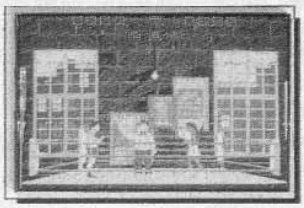
At last. My first crack at the big time. Three names appear on the screen - world ranked boxers, who I am now elegible to challenge. I nominate George Brown. George refuses my offer. Ray Waters is not so rude. He accepts, and the fight is on.

This time, we have a referee, complete with clearly digitised instructions. "Box," says the ref - and the fight is on. We exchange a few quick blows, then move into a clinch. "Break," yells the referee, but not before my opponent has scored 50 points with well timed punches to my body. Ouch.

The fight continues. Waters is leading on points, but I finally bring out my secret weapon - the uppercut. He falls to the floor, out for the count. Success. I am-well on the way to my World Championship.

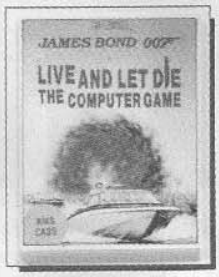
The Champ has a lot to offer. Graphics are clear and detailed, animation is smooth and convincing, and the sound effects are both useful and atmospheric. As a sporting simulation, the game also rated well. There are plenty of punches and movements to master, and variables like "Morale" and "Condition" that add to the feeling of realism.

Best of all, there is a two player mode. Now here's an idea - buy a copy of *The Champ* for your kids. Next time young Johnny feels like thrashing it out with his little brother, give them each a joystick, and sit them down in front of the computer. At last - a game that's actually useful! ❑



Review copy from Pactronics (02) 748 4700. RRP Amiga $59.95. C64 version available soon.

The Story So Far



Tony Smith dusts off his Commodore 64 to check out a collection of classics with a nostalgic title.

WITH THE CURRENT resurgence of the Commodore 64, the arrival of a three-tape pack named *The Story So Far Volume 2* started a whole new chapter of computing in my home. First I pinched the 64 from its place in my son's bedroom and attached it to my 1084S monitor, leaving the Amiga RGB cable in place. To my surprise and delight, when both computers are sitting side by side and running, a simple press of the RGB/CVBS button brings either the 64 or the Amiga instantly to view. It has been a long time since I had loaded any tape-based software, so I prepared for a long wait.

Not so, for although the loading of tapes takes time, it gave me a chance to reflect on the good old days when I had only tapes, and where I am now. While I am loading the 64 tapes, I can download files, edit disks, play Amiga games, write reviews, watch demos, and even listen to hi-fi quality music. We've come a long way, folks.

A quick press of the switch and presto, *Overlander* has loaded. The first game of five, *Overlander* is a driving game with good sound effects and thanks to the 1084S monitor, excellent graphics. You must choose between doing 'runs' for the good guys, or running pirate software for the crimelords for bigger rewards. Crime does not pay - or does it?

The more rewards you collect, the better equipped your car will be. Accessories include turbos, armour, flamethrowers, wheelknives, rockets and more. Scenery zooms by realistically and hazards abound. There are four types of outcasts - crawlers, roadhogs, kamikazes and off-roaders. Each enemy has different methods of attack and strength, the higher levels requiring extensive blasting for kills.

A good start for the package, *Overlander* will keep the trigger-happy driving freak glued to the screen for ages.

Next game to load was the other side of tape one, this time it was an old favourite, *Hoppin' Mad* a jolly game where you are a string of globes, bouncing your merry way to the seaside. On the way you are assailed by various foes, hedgehogs, frogs, rooks, bees, carnivorous plants, cacti and lizards. Catch ten balloons and you can float to the next level, collect the bonus objects for high scores - a simple yet infuriating game which offers plenty of challenge without being too easy.

Following *Hoppin' Mad* comes a classic platform game, *Beyond the Ice Palace.* Set in times of magic and goblins, this quest is to banish evil from the land of the good - now where have I heard that before?

Nasty critters come from all directions, draining your precious power and ending your lives - six lives are given and all of them are needed. In times of need, spirits can be called upon to help you out, but only two are available in the early stages of this epic.

This game will satisfy the sword-wavers and explorers with lots of fights and many screens-worth of scenery to search.

James Bond is the hero of game four, *Live and Let Die.* Unfortunately, this would be one of the weaker points of the package. Although the theme is fairly good, with a speedboat being the vehicle, the ultimate result is not the greatest with blocky graphics and jerky movement spoiling the whole image.

Heroin dealers are the target of your mission with several levels of defence needing to be breached. If you can stand the graphics, the game itself is not too bad with different coloured targets requiring different weapons and evasions. Dark tunnels must be traversed, fuel and snuff bombs collected, locked gates blown open and finally, by jumping off a log and skillfully sending a snuff bomb, the factory can be destroyed. Good luck - if you persevere with this game, you will probably enjoy it.

Last but not least comes *Space Harrier,* pitching you against the evil aliens who have taken over Dragon land. Scrolling into the screen, the aliens come from the sides and grow alarmingly as they near you. Blasting and more blasting is the name of the game as you near the guardian of the level, a huge snake-thing thrashing all over the screen, seeming to absorb most of your shots. This game was ahead of its time when first released for the C64 and is still good enough to keep you shooting for ages.

The Story So Far Volume 2 is a fine collection of games, with enough to satisfy the shoot/strategy/sim fans. Tape loading is a little slow but if you are a tape user this won't worry you. *The Story So Far* is good value for money. Just the thing to drop into the keen young Commodore fan's Christmas stocking. ❑

Available from Questor
(02) 662 7944.
RRP C64 disk $39.95,
cassette $39.95.

Licence to Kill

Cadet computer journalist ***Aaron Richardson*** *tries his hand at the latest in Bondage ... it's the game based on the movie based ever so loosely on the book.*

"THE NAME'S BOND ... JAMES BOND." Yes, he's back. Code name 007 takes to the small screen in a thrilling adaption from the new movie *Licence To Kill*. If you've ever wanted to play the part of the world's best kept secret agent then this game is for you.

Domark's previous James Bond licences have always been a tad disappointing, but this time they have come up with some thing a bit more substantial. James is up against the drug-smuggling forces of Sanchez, armed only with his hand gun and whatever gadgets Q has given him.

Licence To Kill is a multi-level, multi-role game. 007 takes the controls of helicopters, boats and tankers, performs death defying parachute stunts and even takes to the sea for a spot of barefoot waterskiing.

Play starts in a helicopter armed with only one single shot cannon. Your task is to fly 007 to his drop point, and you have four lives to do it in. Sounds easy? Maybe it would be if there weren't gun emplacements continuously firing at you, buildings and trees to dodge and a small jeep harassing you through the level.

After completing the first level on your fifth or sixth attempt the helicopter exits leaving poor old 007 (who actually gets younger every movie) to slug it out with 20 or 30 trigger happy thugs. These baddies actually have brains! They retreat and seek cover when they're getting beaten, which makes them very hard to kill.

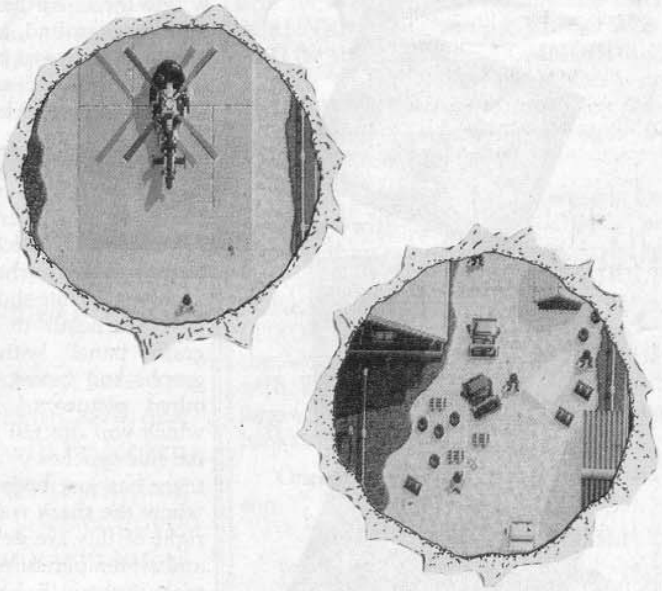
You start the level armed with your faithful 15 shot Beretta hand gun and two clips. With attackers on all sides you will tend to spray bullets everywhere trying to wipe them out. Don't panic! Carefully aimed shots are a must to conserve ammunition, and they bring better results too. Slow and steady is the only way to go - heroic Rambo-style moves are certain to end in tragedy.

Bond can be hit four times - the fifth shot is lights out and back to the start of the level. It seems to take for ever to get through this level but when you do its back to the skies again in another nail biting battle.

This time James is lowered by rope from the helicopter as Sanchez attempts to escape to Cuba in his aircraft. This is tricky ... you must guide 007 onto the back of the dodging plane so he can attach a tow rope. Position him directly over the tail of the plane and press the fire button to "lock-on"- not as easy as it sounds.

Licence To Kill will give you hours of enjoyment. The game is challenging - I've only told you about the first three levels, and there are plenty more. Graphics are good, with large sprites and a lot of variety. It should be a success with game lovers everywhere. *Licence To Kill* has now been released on all formats.

Review copy from Jannelle Skipper, Wills, Tasmania. Ph 003 315 688. Fax 003 315 868. ❑



Distributed by Questor (02) 662 7944.
RRP Amiga $49.95, C64 disk + cassette $29.95.

AMIGA XMAS BOX
"COLLECTOR'S CHOICE"

5 Discs with Selections of Imported Programs For $35.95 post paid PLUS BONUS DISC

Send: Cheques, Postal Order, BANKCARD, MASTERCARD or VISA to:
C-WR, PO Box 774
Jamison, ACT 2614.

Card Number . . . . . .
Expiry date . . . . . .
Signature . . . . . .

Remember the summer of '75, when you were afraid to go in the water? You read the book, you saw the movie, you bought the tee-shirt. Now nearly fifteen years later, just when you thought you were safe from Fishy commercialism, that great gaping mouth is back in ***Jaws****, the computer game!* ***Greg Munro*** *reports.*

YOU ARE LOOKING at a dark, sinister ocean. A shadowy ripple, just recognizable as a dorsal fin, slices silently through the water and disappears. Seconds later a girl appears, kicking and splashing in an awkward Australian crawl. As she reaches centre screen, the picture pans to keep her there. Then suddenly and silently a great conical head strikes her from below, "jaws snapping shut around her torso, crushing bones and flesh and organs into a jelly." Her last lingering scream fades to silence.

You guessed it folks. *Jaws*, the movie sensation of the 70s, has come back to haunt us. The opening of the game is impressive - a clever ray-traced animation of a bathyscaphe being lifted onto a boat accompanied by the da-dumm da-dumm of the famous *Jaws* theme music.

Then, it's into the game itself. The opening game screen is divided vertically into three. At the top, set on a woodgrain background, are the score, an outline of the gun and bullets you must find to kill the shark, and an indication of how much air and how many divers you have.

Next, in the middle, is a picture of your cabin cruiser, with the diving sphere on it, powering through a shimmering ocean. Occasionally a flock of birds will fly overhead, or the dorsal fin of a Great White slide silently by.

Underneath this is another woodgrain panel with various pictures, graphs and boxes. First is a small coloured picture of Amity Island, from which you can tell at a glance which of the five beaches you have closed, where there has just been a shark attack, and where the shark was last sighted. To the right of this are devices showing water and air temperature; time elapsed; swimmers (when 15 have been eaten, you lose!); messages; and a picture of the current diver (Brodie, Quint, Hooper, and three others).

There is also a gauge called the Mayorometer, which ranges from OK through So-So to FIRED. If you keep too many beaches closed for too long the island's economy will suffer and Mayor Vaughan will sack you!

Pulling back on the joystick gives a full screen map of the island, with which you may choose where to position your boat and which beaches to close. Pushing forward on the stick returns you to the main screen. Click the fire button, and the Bathyscaphe is lowered, transferring you to the undersea screen. You may toggle between surface and underwater scenes using the space bar.

As soon as you hit the water, a steady rhythmic breathing starts, sounding exactly like a real scuba dive! After a while it really gets on your nerves.

The water is shallow, barely covering a reef populated by many deadly sea creatures, which collide with you or shoot at you, or both. Beneath this reef is a vast labyrinth of undersea caves, into which your intrepid divers must venture. The equipment needed to kill Jaws was lost there when the transporter vehicle sank. So far I've only been able to find one of the four pieces of the gun before all six divers expire.

There are two types of sea creatures. Flashing ones can only be shot with "Mega Bullets", which can be found by shooting normal sea creatures. Other icons also appear, representing treasure, extra air, fast bullets, and so on. I've never managed to find any extra air, and often end up staring at a graphic of a rather distressed looking diver with the cheery message "You have suffocated!"

Jaws is almost worth playing just for the several different and interesting ways to lose! So far I haven't found any way to win, but the challenge is there - how can I let myself be beaten by a fish?! ❑

Distributed by Mindscape
(02) 899 2277.
RRP Amiga $49.95, C64
disk $39.95, cass $29.95.

IF YOU'VE BEEN CLEVER ENOUGH TO BUY THE WORLD'S SMARTEST COMPUTER, JOIN THE CLUB.

By choosing an Amiga, you've already put yourself one step ahead of the average computer owner.

Because the Amiga is so much more advanced than the conventional PC, it's like comparing an old fashioned record player to a compact disc system.

In fact, part of the fascination of owning an Amiga is that we're still finding out how far we can push it.

Exciting new programs and applications are being developed all the time as we explore the Amiga's outstanding computing and graphic capabilities. That's why you'll find membership to Club Amiga so rewarding. You'll receive a Commodore Amiga Review each month and the Commodore Amiga Review annual to keep you informed of the latest developments in Amiga applications and software.

You'll also be receiving a regular Club Amiga newsletter to keep you up to date with the latest developments.

In fact, if you join Club Amiga right now, you will receive, at no extra charge, an exciting software package worth $99.

That's worth more than half your membership fee already! That's just one of the ways Club Amiga will help you get the most from your Amiga system.

So why not do the smartest thing since buying an Amiga. And join the Club!

MEMBERSHIP OPEN TO: COMPANIES, INDIVIDUALS, AMIGA USER GROUPS, SCHOOLS AND TERTIARY INSTITUTIONS.

BONUS GIFT

Join Club Amiga now and receive a Textcraft Plus or Graphicraft program at no extra charge. (Each program normally retails for $89.)

Membership includes one year's subscription to Commodore Amiga Review and Commodore Amiga Review Annual, newsstand value over $42.

SUBSCRIBE NOW AND CLAIM YOUR BONUS.
CLUB AMIGA MEMBERSHIP APPLICATION FORM

Name: _____

Address: _____

_____ P/code: _____

Ph. No. _____

Male ☐ Female ☐

Age: Up to 18 ☐ to 25 ☐
26 to 34 ☐ 35 to 49 ☐ Over 50 ☐

Married ☐ Single ☐

Children 0 ☐ 1-2 ☐ 3+ ☐

Occupation: _____

Is your Amiga used mainly for
Business ☐ Pleasure ☐

Bonus offer *Selection: Textcraft ☐
Graphicraft ☐ Neither ☐

Club Membership Joining Fee $50.00.
Annual Subscription $130.00.

Yes, I would like to become a member of Club Amiga.

I enclose my cheque for $180.00 and agree to be bound by the terms and conditions of membership to Club Amiga.

I authorise Commodore Computers to debit my ☐ Bankcard ☐ MasterCard account for the amount of $180.00.

My card number is

Signature: _____

Expiry Date: _____

I understand I should receive my CLUB AMIGA membership package within 4 weeks.

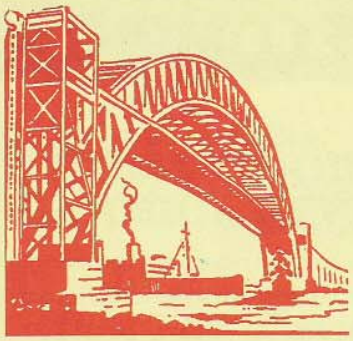
Signature: _____

Date: ___ / ___ / ___

Send to: Club Amiga, 67 Mars Road
LANE COVE NSW 2066

CLUB AMIGA™
BY COMMODORE®

JSA COM0383



Adventurer's Realm

by Micheal Spiteri

WELCOME TO THE Christmas edition of Adventurers' Realm - the only adventure column in Australia dedicated to adventurers on all Commodore computers. If you are stuck in any game, write to the Realm. If I cannot help you out with the hundreds of hints in stock, then I'll print your problem on these pages for somebody else to ponder upon. If it's general hints you are after, ask for some of the Realm's free hint sheets - available for most of the popular games on the market. The address to write to is:

Adventurers Realm 1/10 Rhoden Court North Dandenong Vic 3175

If wargames are your problem then write to Barry Bolitho at the above address, and he will try to help you out.

Finally, Kamikaze Andy is on hand to help you out with all your roleplaying queries. His address is:

The Dungeon 44 Hawkesbury Drive, Willeton WA 6155

Important Note when writing to the Realm. Always enclose a stamp addressed envelope, otherwise the chances of a reply are next to none! ❑

Free hint sheets

● The following hint sheets are available from 1/10 Rhoden Court. Maximum 4 per person:

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

Red alert: The Realm has run out of *Faery Tale* hint sheets! If some kind adventurer could send me a copy, it would be most appreciated! ❑

Realms chit chat

● Peter Gerdsen, teacher at Wangaratta Primary School, writes: "Some children in my class were meant to write this before the holidays began but ran out of time with Education Week and end of term activities. I have been letting them use *Uninvited* before and after school but the groups working on the puzzle have come to some dead ends and I suggested writing for help as a way out rather than giving up.

"We have three Amigas in our classroom which are used for word processing, *DeluxePaint III* and *Fantavision*. Children are being encouraged to present some of their writing as an animation to show it is just another form of publishing a finished piece.

"Adventure games have a place in the classroom because of the strategies involved together with the planning and recording (mazes, levels etc). As a school we have to consider the suitability of the content carefully before kids can be set loose with the program. Can you recommend some adventures high in the application of strategies and low in aggression?"

MS: There are quite a few products available on the Amiga that are suitable for use in the classroom. One you must get hold of is Where in the World is Carmen Sandiego, a fun geography mystery adventure. (from Dataflow) Then there is the Three Stooges by Cinemaware. (from Mindscape) You mentioned Uninvited, well what about Deja Vu by the same makers, and also the French game Mortville Manor (from Pactronics). The Zork series by Infocom should also be looked at. I'd be interested to hear from other teachers and parents on this matter, since computers are now a major part of a child's education.

Meanwhile, Glenn Holland of Glebe wrote to be me enquiring about a game called The Great Cave (or something similar). He played this game a few years ago on an Apple IIe in Los Angeles, but is having trouble tracing the game down in Australia. From the description Glenn gave me, it sounds like a variation on the original mammoth game simply called Adventure (which spawned many duplicates, including Zork, Colossal Cave, Adventureland etc). If anybody knows about The Great Cave, please please write to the Realm.

The Questor Adventurer of the Month

● Long overdue, each month the Realm will now be giving a free game to the person who supplies the most helpful collection of hints and tips. The game is kindly supplied free of charge by those guys n' gals at Questor, distributors of high quality software. This month's winner is P. Georges of St. Clair.in NSW, who sent in a complete disk full of hints and tips (from A to Z), collected up over the last five years. Mr Georges wins *Sleeping Gods Lie* for the Amiga, RRP $69.95, from Questor. Also worth a mention is Tony Lundberg, who sent in some other handy hint sheets. ❑

Problems, Problems, and more Problems
(or the Troubled Adventurers Dept)

● Would you believe, as the year draws to a close, scores of people are stuck in dungeons, caves, and other mysterious places. And I thought this was supposed to be the festive season.

Game: Spellbreaker
Victim: Michael Lee
Problem: What use is the Lara Fragment?

Game: Frankenstein
Victim: Mitchell Raskbrook, Heathbridge WA.
Problem: Is there a key for the chest in the garden? If so, where and how can I find it? How can I find the ice pick and escape from the ice tunnels?

Game: Guild of Thieves
Victim: Urk McGurk, Parafield Gardens, SA.
Problem: How do I get the cube from the weighing machine?

Game: Beyond Zork
Victim: S.K.Pilley, Eastwood, NSW.
Problem: How do I get the giant onion from the inn to the idol in the jungle?

Game: Zak McKracken
Victim: (Could not decipher signature), St Maroubra, NSW. Problem: How do I open the panel in the room on Mars with the force field?

Game: Shadowgate
Victim: Risole
Problem: a) Where is the key for the door in the cave that the Gargoyles are guarding? **b)** How do you move the boulders that block the stairway in the cave with the waterfall at the beginning? **c)** How do you get to the doorways that are too high to reach? **d)** How do you get the platinum horn from the hell hound?

Game: Firelord
Victim: Joan Baldwin, Cooks Gap, NSW.
Problem: Cannot find the knights who give the weapons, or the princess.

Game: Shadowgate
Victim: Barbie Hitchemor, Ipswich, Qld.
Problem: In the Mirror Room, how do I unlock the steel door behind the broken mirror?

Game: Inside Outing
Victim: Rae Harris, Kingston Park, SA.
Problem: How does one mobilize the canaries (!?!). How does one mobilize the poison plants in the secret room?

Game: Kings Quest III
Victim: Lesley Robinsom, Williamstown, NSW.
Problem: Where or how do I get the cat hair?

Game: Emerald Isle
Victim: Val Brackett, Gladstone QLD.
Problem: How do I get to the north platform of the forest railway station? How do I stop the mine from caving in?

Game: Legend of the Sword
Victim: Ken Cras, Melba, ACT.
Problem: Once I have climbed the tree and searched the trolls, I cannot go back across the river!

Game: Deja Vu
Victim: Stuart Johnson, Mt Eliza, Vic.
Problem: How do you get rid of the gun? Does anybody know anything about a secret passage?

Game: Starglider II
Victim: Ben Kovalik, Carramar, NSW.
Problem: What is the purpose of the energy cube launcher? ❑

Help, Help, and More Help
(or the Smart Adventurers Dept)

● Lesley Robinson, who writes from the RAAF base in Williamstown, NSW, has offered help for the following adventurers:

Game: Uninvited
For: Christine Sullivan
Help: To pass the dogs just say Instantum Illuminaris Abraxas.

Game: King Quest I
For: Joel Williams
Help: You must find and fight the dragon.

Game: Arazoks Tomb
For: Severian
Help: To get past Zud you must use the sword that is in the other city.

Game: Police Quest
For: Rob Curtis
Help: You must call a taxi in your hotel room. Dial information (411) and ask for Lynton Cab Company.

Game: Guild of Thieves
For: Craig Blackberry
Help: To get the chalice from the bear you must catch a fish and then rub with poison then feed it to the bear.

Risole also comes out with hints and tips with help for David Marjanovic:

Game: Shadowgate
1) To get past the Gargoyles, get the scroll which has written on it Instantum Illuminaris. Open it and operate it on them. 2) To cross the Lava Pit, take the book on the table in the library, put the glasses on and read it. Operate this in the statue. 3) The key for the left hand door in the banquet hall also needs a scroll, this time the one marked Terra Terrak

Game: Uninvited
To get rid of the ghost in the kitchen, go to the storeroom which has the Spider Cider in it. Use it on the railing where the spider runs across. Go out of the room and go back. Take the spider and use it on the ghost. ❑

Cockroach Software
PO Box 1154
Southport 4215
(075) 916188

Cockroach Turbo Rom	$42.50 inc postage
Cockroach Graphics Utility	$69.95 inc postage

Adventurers Realm - Games of the Year 1989

● The following games released this year get my vote for being of outstanding quality and good value for money....

Mortville Manor

(for the Amiga)
available from Pactronics

● This has to be one of the best adventure games released. Totally engrossing, great on atmosphere. This game set in France in a large manor during a cold winter, and gives you the role of a famous detective who received a plea for help from a childhood sweetheart. Many characters that literally speak to you in French accents, neat graphics and sound, and enough run-of-the-mill mystery adventure problems to keep you hooked until the wee hours. The format is similar to that of *Deja Vu* - only better.

Corruption

(for Amiga and C64) available from Questor

● Released early this year from the makers of *Pawn*, *Guild of Thieves*, and *Jinxter*, comes this thrilling original adventure. You have just become a partner in a broking firm, when things do not seem right. Yes folks, there is heaps of corruption taking place, and you've only just arrived!! Great parser and text, as well as very nice graphics. Not many locations to visit, but enough to keep you intruiged.

Fish

(for the Amiga and C64)
available from Questor

● From the makers of *Corruption* comes this totally original adventure that has been sweeping up awards everywhere. You play an inter-galactic agent who is currently having a holiday inside the body of a fish, when all of a sudden you are called upon to search for the devious Seven Deadly Fins - an inter-dimensional group of anarchists. Many places to visit, many problems to solve in this very humorous graphic adventure. Definitely a winner in the Realm.

Balance of Power - 1990 Edition

(for the Amiga & C64)
available from Mindscape

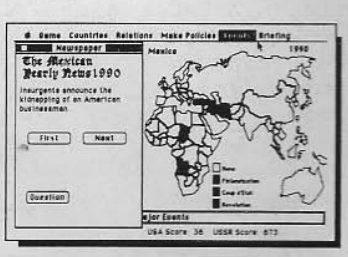
● This game deserves another mention. No doubt the best political strategy in the world, it gives you the role of one of the leaders of one of the super-powers as you start to change and make world events. First released a few years back, this latest version is fully up to date with good graphics and packed with features. I'm just amazed at how author Chris Crawford could fit so much information on a single floppy disk!

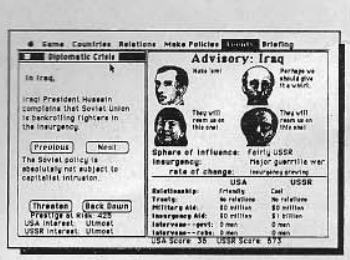
That's all for Adventurers Realm - 1989, I hope you all have a Merry Christmas and a very happy New Year, and I'll back back next month & year! So, until 1990 - so long!

Clever Contacts

● To start the new year rolling, a lot of people have written in asking for a clever contact list. If you'd like to be on this list, just send in the list of games you can help out in, with your name and address in clear letters. ❑

Corruption





Balance of Power - 1990

Advertisers Index

Amiga Live	36	Desktop Utilities	5	Micro Peripherals Australia	69
Amiga Annual 1990	24	Diskassy	11	Mindscape International	OBC
Artscape	54	Disk Magazines	56	Multicoin	37
Briwall	60, 61, 62	ECP	26, 27	Ozisoft	65
Cockroach	79	Fromate	9	P CM Computers	9
Commodore	IFC, 19, 77, IBC	Hard Disk Cafe	7, 17	Pactronics	3, 5, 23, 29, 55
Commodore Annual 1990	1	Harris Hi-Tek	53	Parcom	38
Computer Discounts	31	Home Entertainment	21, 39, 40, 41	Power Peripherals	67
Computa Magic	51	Hardware Peripheral Dist	30	Prime Artifax	58
Computermart	2	Interlink Software	33, 34, 35	Proton	15
Computermate	25, 45	Island by Mail	43	Questor	13
Computerscope	59	Lazarus Ribbons	9	Roseneath	53
Computer Spot	46, 47, 48, 49	Maxwell	57	Whites	7
C/WR	75	Megadisc	56		

COMMODORE ANNOUNCES THE BEST VALUE BUSINESS COMPUTER EVER!

Commodore, the world's largest supplier of computers, introduces the new PC30-III 80286 PC(AT).

Designed to keep small business in business. Because the new German made Commodore has full business capabilities, without a business price.

The new German made Commodore PC30-III caters for business applications such as • Spread Sheets • Accounting Software • Data Base • Word Processing.

The Commodore PC30-III is of course fully MS DOS compatible. It's also the ideal system for existing PCXT users who need better performance from their 8088 system without outlaying a small fortune to achieve 80286 features.

The new Commodore PC30-III gives you everything you'd expect from an international computer company like Commodore. It is not a Taiwanese clone.

Commodore

For further information phone your nearest Commodore dealer.
Computer Spot Shop 3, 99 Elizabeth Street, Sydney, NSW. Ph: (02) 221 1910. **Computer Spot** Shop 21A, Greenway Arcade, 222 Church Street, Parramatta, NSW. Ph: (02) 891 1170. **Computer Spot** 180 Pacific Highway, Charlestown, Newcastle, NSW. Ph: (049) 42 1522. **Steve's Communication Centre** 68 Wollongong Street, Fyshwick, ACT. Ph: (062) 80 6877. **Maxwell Office Equipment** 162 Nicholson Street, Abbotsford, VIC. Ph: (03) 419 6811. **United Computers** 991 Stanley Street East, East Brisbane, QLD. Ph: (07) 393 0300. **Computer View** 21 Brisbane Road, Bundamba, QLD. Ph: (07) 282 6233. **Scarborough Fair Computer Centre** Scarborough Fair Shopping World, Southport, QLD. Ph: (075) 32 5133. **Bruining Headlam Computers** 241 Pulteney Street, Adelaide, SA. Ph: (08) 232 0991. **Bruining Headlam Computers** 116 Cambridge Street, West Leederville, WA. Ph: (09) 381 2988.

JSA COM 0437

Distributed by
Mindscape International
5-6 Gladstone Rd
Castle Hill, NSW 2154
Phone: (02) 899 2277
Fax (02) 899 2348

MINDSCAPE
INTERNATIONAL

Available on Amiga
Atari ST
C64 disk and cassette
IBM