

COMMODORE

COMPUTING INTERNATIONAL

JANUARY 1990

POWERING INTO THE 90's

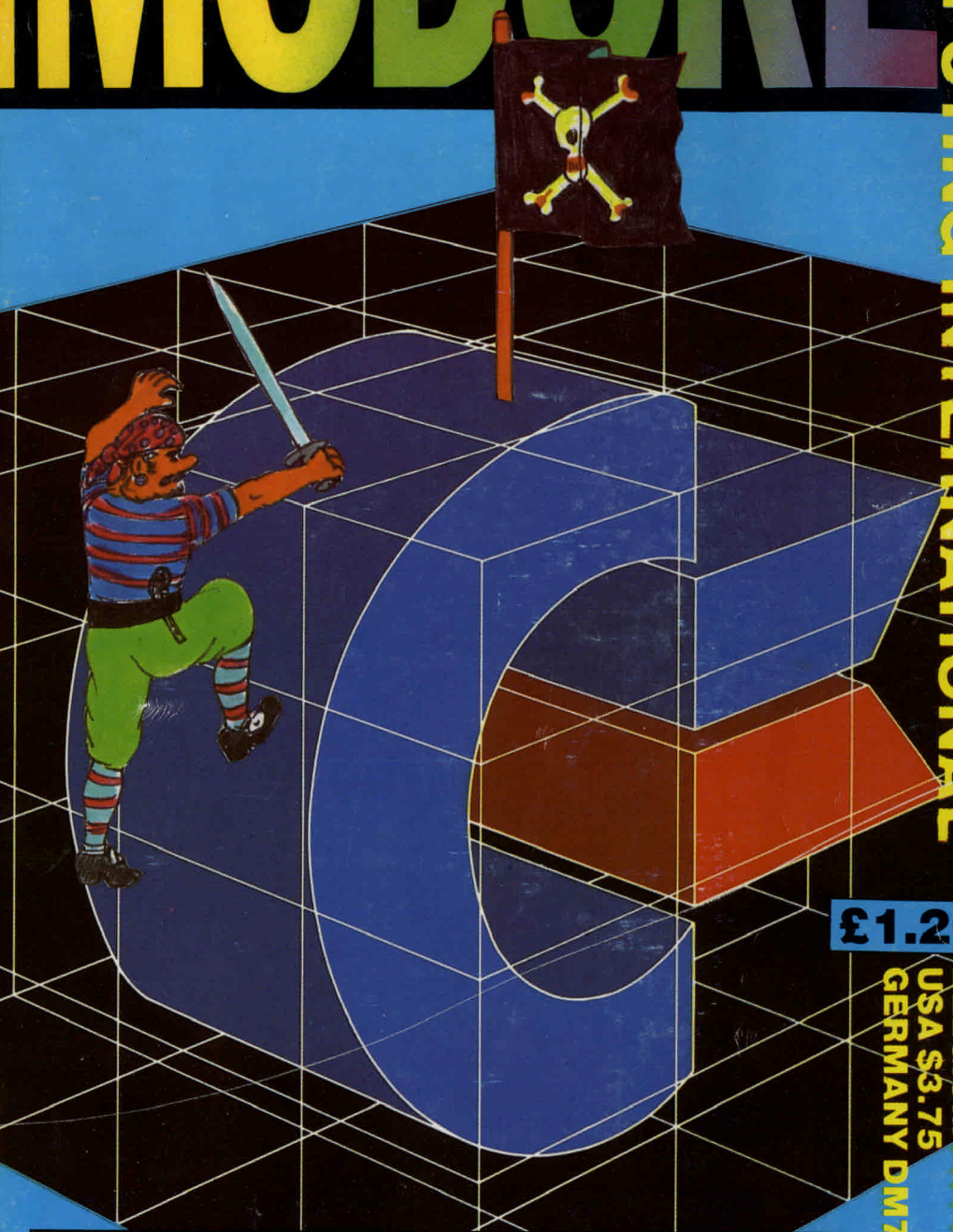
WATCH OUT! PIRATES ABOUT!

It's Commodore Showtime!

**College Days
The Power Cartridge
and YUK!
Dirty Mains!**

Amazing

**RETROGRADE PLUS
POWERDRIFT
TUSKER
INDIANA JONES
THE ADVENTURE
TURBO OUTRUN
BATTLECHESS
64
AND HEAPS MORE!!!!**



£1.20

**BELGIUM FR 118
USA \$3.75
GERMANY DM7**



WIN!

Indiana Jones goodies!!



We do it in real-time ... and in **COLOUR.**



All our video digitisers are real-time colour and capture a picture as fast as a TV camera can provide it, PLUS – All include a live framestore output for connecting to a second picture monitor or even a TV set to simplify focusing and setup. (Your computer monitor may have a switched CVBS input so you may not need a separate framestore display.) PLUS – All have monochrome facilities with comprehensive software tools.

SuperPic Amiga – Real-time digitising with genlock. Software to take advantage of the Amiga's colourful 4096 colour HAM display; including overscan and interlace as well as 32 colour mode. Writes IFF compatible and custom format picture files. Works with A2000, A500 (A1000 with adaptor).

Recommended retail price **£520.87** (£599 inc. VAT).

SuperPic PC – Includes IBM interface card and UHF TV framestore output. The framestore system means that even non-VGA PC users can save and recall colour images. Software to produce 256 colour VGA images from a palette of 256,000 and write GIF, PCX and custom format files.

Recommended retail price **£520.87** (£599 inc. VAT).

ColourPic Amiga – Similar specification to SuperPic Amiga, without genlock but includes UHF TV output.

Recommended retail price **£433.92** (£499 inc. VAT).

SuperPic, SuperPic PC and ColourPic can be obtained from your Amiga/PC dealer or for UK orders only send your cheque (including VAT) made out to JCL Business Systems and your digitiser will be shipped FOC by courier within two days (subject to availability). State model required. For orders outside UK please phone or FAX for details.

BUSINESS SYSTEMS LIMITED

71 St. John's Road, Tunbridge Wells, Kent TN4 9TT. Tel: Tunbridge Wells (0892) 510845. Fax: (0892) 51177.

FIENDISH FREDDY'S



Reasons
to be cheerful

BIG TOP O' FUN

Available for Amiga, ST,
IBM and compatibles,
Commodore 64,
Amstrad and Spectrum.



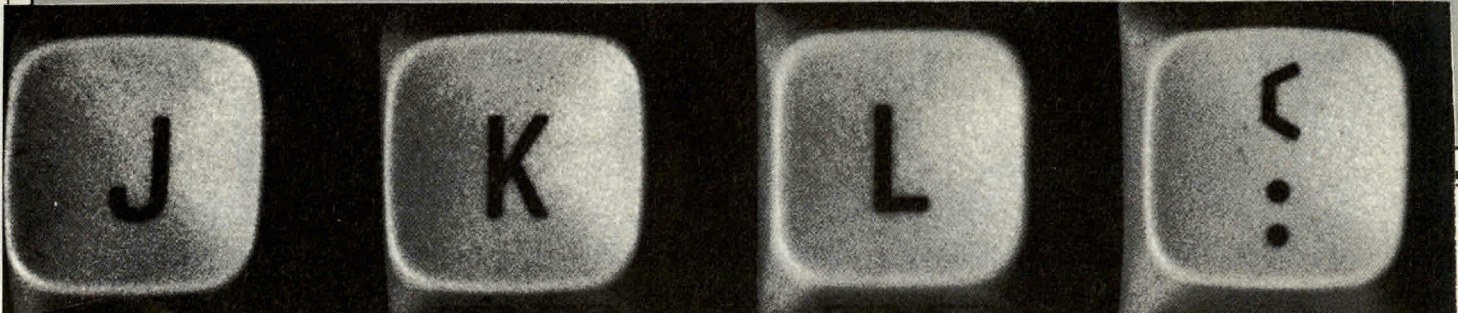
Inside



COMMODORE COMPUTING INTERNATIONAL

JANUARY 1990 Volume 8 No. 5

CCView	6
<i>Communications – are they changing our world?</i>	
News	8, 10, 13, 14, 16
<i>The latest products, events and gossip...</i>	
SMT	18
<i>Paul Rigby penetrates Surface Mount Technology</i>	
Dirty Mains	21
<i>Suppressing the surges with Natalie Greene</i>	
Power Cartridge	23
<i>Andy Eskelson powers into the 90s</i>	
The Commodore Christmas Show	28
<i>The place - London.... The Star – CBM</i>	
Piracy!	30
<i>Carrie Beecroft and Simon Power investigate</i>	
More 64 Power	37
<i>Peter Gerrard plugs you in</i>	
Battle Chess	41
<i>Fighting tactics with Nigel Streeter</i>	
Myth	44
<i>Kati Hamza reports on a legendary game</i>	
Stunt Car Racer	46
<i>Tony Horgan gets in gear</i>	



U

I

O

P

Horgans Hints	48
<i>Top tips from Tough Tony</i>	
PowerDrift	50
<i>Activision hits the road</i>	
Adventure	54
<i>Andy Moss dares and conquers</i>	
TurboOutrun	58
<i>Outrunning Ace Horgan himself!</i>	
Tusker	60
<i>Elephants come to the fore</i>	
Charts	62
<i>The latest hits, according to Zak</i>	
Retrograde	66
<i>Tony shoots 'em up in this mega blasting game</i>	
Show Games	69
<i>Cabal and The Untouchables – hot from the Commodore Show!</i>	
So you want to go to College?	70
<i>Star gazing with Peter Gerrard</i>	
Indiana Jones – The Adventure	74
<i>The latest in the Indy games run</i>	
Competition	77
<i>Win 15 copies of Indy, plus loads of U.S. Gold goodies!</i>	
Programming Techniques	79
<i>Peter Gerrard advises</i>	
Book Review	80
S–Entry	84
<i>Foolproof programming!</i>	
Programs	85
Technical Letters	86
<i>Dear Jack answers back</i>	
Compunet	88
<i>Log on with Jonathan Littlewood</i>	
The NEW Hacker's Handbook	93
<i>Read the review ... WIN the book!</i>	
CCIMagentaPages – Little ads, big bargains	97

}

=

RETURN

Dear CCI Reader,

If I were to claim that the Berlin Wall has been brought down by a Commodore 64, you probably would think that I did not have both oars in the water. No, I have not gone computer bananas and started to sing love songs to my disk drive but I do maintain that the fast changing East European situation did not come about through political or even economic pressures, though they may have helped. What largely lies behind the crumbling of the totalitarian institutions of what, not so long ago appeared stone-built Communist states has very little to do with the threats or even promises of the Reagans and Thatchers. There has been another cause - communication; and to a substantial extent that means electronic communication.

It started in the Soviet Union with the passing of samizdat - illegally printed, or in many cases photocopied material, by dissidents or banned writers. You can photocopy papers quickly and easily and they can be spread privately and fast even in a police state. Democratic governments leak like sieves through photocopying and dictatorships certainly cannot keep track of everything - they are just not efficient enough.

Then came the cassette recorder. Western tapes - especially the excitingly forbidden rock music went the rounds. And so did information acquired by one person that could be transmitted to many. And information moved the oppo-

site way too with dissidents sending their own tapes echoing around the globe.

The telephone lines uniting the whole world made it very difficult and horrendously expensive to keep tabs on everyone.

Radio and television beamed across the Iron Curtain played a role in letting Eastern Europe hear and see a different picture to the official biased version. There were too the programmes created for the West itself that were impossible to stop from "leaking" over the borders. (Some would argue that TV anyway gives us too a false picture of life - but that is another problem!).

And computers...all over Eastern Europe, you can find Vic 20s, C64s, PCs from Commodore and many other companies, often old stock purchased cheaply in the West.

Commodore has even been officially invited to demonstrate the Amiga in Moscow and CCI itself is subscribed to by the Library of the Soviet Academy of Sciences. Whether the old-style leaders approve or not - Gorbachev does - technology unites the world. It is genuinely a "Jeux sans Frontieres", a game without frontiers and a knockout blow for isolation.

Walls of bricks and barbed wire these days cannot keep out the communication invasion. There are fax and bulletin boards. There are Reuters screens and videotex. There are satellites. There is

MSDOS. Money itself flows at electronic speed across a unified worldwide financial system in which all countries that wish to trade must work.

20 odd years ago, Marshall McLuhan coined the phrase "Global Village". That's what the world is now, and you can't keep anything secret in a village. Once people know what is happening in the rest of the world, they are a part of it. They can set their own standards by it or urge it to meet theirs; or they can demand to move toward it. Communication is what has been influencing Eastern Europe - communication, information, ideas from the outside flood in and wash away the walls, and the old leaders and their reactionary governments.

The technological, electronic revolution which has created the Global Village is far stronger than any since the Industrial Revolution. And this is only the beginning.

No, it isn't the C64 that has changed the political face of Europe but it was certainly a part, though perhaps only a small part, of the technology that did the job.

The effects the technological revolution has created across what once was the Iron Curtain are for us in the West fascinating and impressive. We will, in the decade facing us, probably see just as dramatic results right here.

Antony Jacobson
Managing Editor and Publisher

COMMODORE COMPUTING INTERNATIONAL

Managing Editor and Publisher Antony Jacobson
Features Editor Anthony Mael
Staff Writer Tony Horgan
Editorial Assistants Simon Power
 Carrie Beecroft
Consultant Art Editor Graham Baldock
Assistant Art Editor Janice Cook
Production Controller Sandra Gallagher
Production Co-ordinator
 Lucia Szachnowski
Marketing Manager Max Jacobson
Advertisement Director Andrew Bishop
Senior Advertisement Manager
 James Mack
Advertisement Manager Billy Brown
Senior Advertisement Executive
 Paul Clements

Finance Director B.J. Lewis M.Sc. F.C.A.
Financial Controller Raj Kaushik
Contributors
 Andy Eskelson
 Andy Moss
 Dan Horgan
 Daphne Moss
 D. Baillie
 Erik Bakke
 Jack Cohen
 Jonathan Littlewood
 Kati Hamza
 Mark Smiddy
 Natalie Greene
 Nigel Streeeter
 Nikki McKenna
 Paul Rigby
 Peter Gerrard
 Zak Mule Skinner

Competition Controller Teresa Geneve
Telephone 01-278 0333

Editorial ext: 274
 Subscription ext: 260
 Advertising ext: 280/288

Published by Croftward Limited
 Finsbury Business Centre
 40 Bowling Green Lane
 London EC1R ONE

Distributed by Comag,
 Tavistock Road, West Drayton,
 Middx UB7 7QE

Typesetting by:
 Able Baker/& Afterimage

Printed by Chase Printers Group

Commodore Computing International - an independent magazine for Commodore computer users - is not connected in any way with Commodore Business Machines UK Ltd. It is published 12 times per year by Croftward Limited. The publishers do not accept liability for any incorrect statements or errors contained in material from independent sources or authors which may be reproduced from time to time.

© Croftward Limited 1990

Maverick v3

Why is this Europe's Favourite C64 & C128 Disk Utility System?

All over Europe, users of other systems are going round in circles trying to answer that question. They want to know why Maverick is so popular. They want to know what makes Maverick so special. Well guess what — we're going to tell them.

Maverick is the physical embodiment of a philosophy that has always been the foundation on which Kracker Jax products are built: Work as hard as possible to create the best product you can, and then improve it. Maverick v3 is already the most powerful archival system money can buy, so how do you improve on that? By adding new features like:-

- A new RAM Expansion Unit support module allowing REU owners to enjoy lightning response with Maverick's Quick File Copier & Fast Single Data Copier utilities — no more disk swaps!
- 64k video RAM support for 128D or C128's with 64k of video RAM, providing a memory buffer for enhanced copying capabilities.
- Ever lost valuable data to a fatal error on the directory Track 18? Or done a short "NEW" and then regretted it? Our new Automatic Directory Recovery Utility recreates Track 18 on 1541 formatted disks, doing hours of intense, critical Recovery automatically!
- An all new Advanced Sector Editor with 100% ML coding for speed and superior performance. Allows editing in ASCII, HEX and disassembly modes. Plus comprehensive on-line help screens!
- For GEOS v2 owners with 1581 drives, Maverick v3's GEOS Toolkit has a utility that allows you to transfer the incredible GEOS v2 over to your high speed, high capacity 1581 drive! This transfers everything, meaning you can now run the 64 or the 128 version from the 1581 alone, without using the 5 1/4" disk at all! And, the 800k 1581 disk leaves plenty of room to transfer all your GEOS applications over to the same disk! Essential for serious GEOS users wishing to unleash the power of Berkeley Softworks revolutionary operating environment.
- Maverick v3 now boasts 400+ parameters that either copy or entirely break potentially destructive protection schemes of some of the world's finest software. Even current Maverick owners will be amazed by the enhancements and additions made, including special RAMBOard support capabilities, exclusive to Maverick v3

Additional Maverick v3 Features

- ★ 1541/1571/1581 Fast file copier, any direction
- ★ GCR Editor for the experienced hacker
- ★ Back-up GEOS 64 & 128, v1.3 & v20
- ★ Error scanner with unique sector editor
- ★ Scrolling M/L monitor with Drive Monitor
- ★ Extensive 40 page documentation included
- ★ Fast File Copier utilizes video RAM & REU's
- ★ Relative file copier, 1541/1571 & 1581 drives
- ★ Produce working back-ups of GEO applications
- ★ Single or dual drive high speed data copier
- ★ Byte Pattern scanner for high speed searches
- ★ Exclusive Popular subscriber service available
- ★ Single or dual state of the art Nibbler
- ★ GEOS Module Parameters & TOOLS
- ★ GEOS Sector editor — works under desk top
- ★ Directory editor helps you organize disks
- ★ Works with 64, 128, 1541/1571/1581 drives
- ★ Technical support from our staff experts

All of these new features are in addition to the amazing array of utilities usually found in Maverick. If there's a better value product on the market, we'd like to see it.

THE NEW MAVERICK v3.0 — ONLY £24.95

Now includes parameter modules 1,2,3,4 and 5. Maverick v3 (formerly Renegade) is available from FSSL. Products which work — from a company who care.



• C128 • AND • C64 • SPECIALISTS

The 1581 Toolkit

Without it you don't know what your 1581 is capable of!

It shocked everyone at a recent London Commodore Show preview — it is The 1581 Toolkit by Kracker Jax, the makers of Renegade and Maverick.

While other companies rushed out ill-conceived and poorly executed programs to "cash in" on the new 1581 disk drive, our programmers took time to become experts on the 1581 before even looking at a drawing board. When they finished the Toolkit project a full year later, they had created a tight, integrated package of essential utilities that make the 1581 fly. We'll take your computer and 1581 as far as it was designed to go, then take it further.

The Fast Data Copier and Fast File Copier now supports 1764 for 3 pass copying, 1750 for 2 pass copying and 64k Video RAM (128 users) for 6 pass copying

- ★ Fast Disk Copier
- ★ Ultrafast Formatter
- ★ Track & Sector Editor
- ★ Directory Editor
- ★ Byte Pattern Search
- ★ Error Scanner
- ★ File Track & Sector Tracer
- ★ Partition Creator
- ★ Relocatable Fast Loader

All of these custom utilities use extremely fast read/write routines. Where appropriate they allow full access to partitions. If you order now we will send you the 1581 DOS Reference Guide FREE! With over 100 pages of concise valuable information, this manual represents a year's worth of research and investigation into the inner working of the 1581 drive and includes a complete commented ROM disassembly listing.

THE 1581 TOOLKIT (on 3.5" disk)

ONLY £34.95

Includes your FREE 1581 DOS Reference Guide. The 1581 Toolkit, works on the C-64 or the C-128/C-128D in the 64 Mode.

Super Snapshot v4

The State of the Smart

The Cartridge Wars. For a while it was tough going — but we kept fighting to be the best. Now public opinion is unanimous, the Cartridge Wars are over — and Super Snapshot is the clear winner!

We've given Super Snapshot v4 enough capabilities to dazzle even the most demanding power user, but also worked hard to give those utilities a sense of style and grace.

So when choosing a multi-function cartridge system, choose Super Snapshot v4 — the cartridge designed to appeal to a higher intelligence. Yours!

Features Include:

- ★ Works with Commodore 64 and 128 computers and disk drives
- ★ Totally transparent when disabled
- ★ Turbo mode — up to 15x faster loading, 7x faster saving
- ★ Super DOS Wedge supports devices 8,9,10 & 11 with extra commands
- ★ Only Snapshot dumps BOTH multi-colour and Hi-res formats
- ★ First cartridge to dump colour pictures to the Star colour printers
- ★ Define and Re-define function keys (12 function keys now supported)
- ★ Sprite disable/re-enable and extended life Game Master features
- ★ Fast file copier for 1 or 2 1541/1571/1581 drives
- ★ 24 hour BBS support is now available
- ★ Includes Shotgun II from Kracker Jax
- ★ M/L Monitor doesn't corrupt memory. Interrupt, examine, modify and resume a running program. PLUS bank-switching, bi-directional scrolling, 10 commands, track and sector editor, ASCII hunt and drive monitor
- ★ Attention 128 and 128D users — 64 disable switch now available. Allows you to boot 128 software without removing cartridge. Add £8.50.

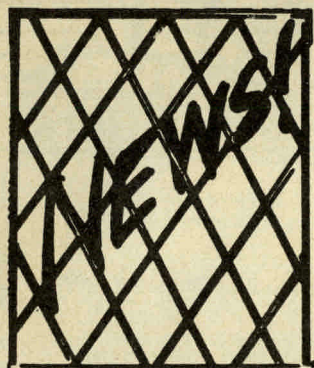
SUPER SNAPSHOT v4 £34.95

Includes FREE: The Slideshow Creator



Prices include VAT & U.K. delivery. Add £1.25 per order for handling. Overseas orders send advertised price plus £2.00 for Airmail. Please send cheque, Postal Order or Credit Card details. VISA/ACCESS orders accepted by telephone. Showroom now open.

Masons Ryde · Defford Road · Pershore · WR10 1AZ · Tel: (0386) 553153



Izzy Wizzy gets Bizzy

Alternative Software announced the signing of their latest licence acquisition, 'Sooty and Sweep' (and Friends). The Sooty TV Show is the longest running TV series in

the world.

The game features an easier version for younger children and a harder version for the serious game player (or parent). The game will also contain the original TV Theme Music and/or sound effects depending which option.

You can either play Sooty or Sweep and play against the computer or you can select the 2 play option in which each person can either be Sooty or Sweep. The game is played against the clock and involves the collection of Sweep's "dog bones" from around the house before Matthew gets home and catches our little mischievous friends. Price £2.99 (C64).

Brad Stallion Thrusts Again!

Free Spirit Software has announced the release of *Bride of the Robot*, a new adult, graphic adventure game for the Amiga. This is the third Captain Brad Stallion adventure, combining twisted humor, colourful graphics, and a strong storyline into what is, say Free Spirit, at times a sinful, graphic adventure.

Once again you take on the role of Captain Brad Stallion, owner and operator of the one-man space vehicle known throughout the entire galaxy as "The Big Thruster." As the story begins, you are stumbling around a moon of Mammaria, trying to forget your hangover and find your ship. Suddenly an urgent message informs you that Miss Galaxy has been kidnapped by a runaway robot. A robot with a sex drive! It was a new development by

Professor Wang — but something went wrong. The robot went berserk, killed Professor Wang and kidnapped the new Miss Galaxy. It is your mission to rescue Miss Galaxy and neutralize the robot. It's a tough mission, and you'll have to use your head to charm Charlotta, Enchantra, and your brain to find Miss Galaxy, but the Federated Government is counting on you.

Bride of the Robot is available now for the Amiga with a suggested list price of \$39.95. 1MB of memory is required. With over 50 graphic screens, new title music, and an array of sound effects, this may be Brad Stallion's greatest challenge, say Free Spirit.

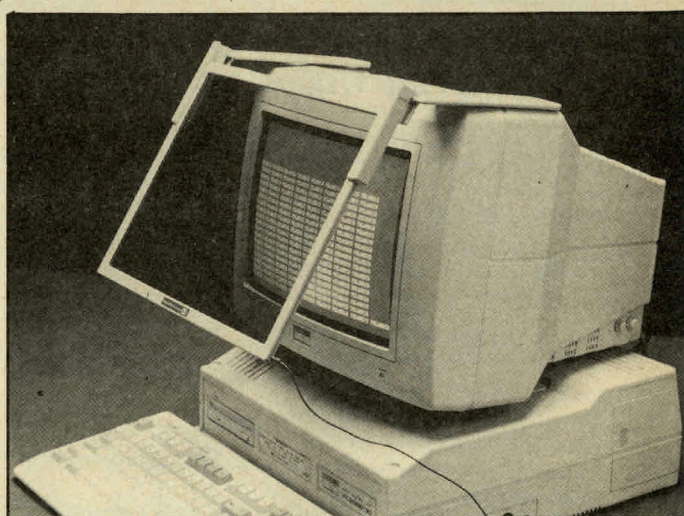
Contact: Free Spirit, PO Box 128, 58 Noble Street, Kutztown, PS 19530. Tel: (215) 683-5609.

Interplay's Dragon Wars

Interplay productions have announced the release of *Dragon Wars*, a roleplaying game for C64.

Dragon Wars offers detailed graphics and anima-

tion and features a combat system adapted from the popular pen and paper super-hero role-playing adventures. This system permits the player to



POLAROID MONITOR FILTERS

Polaroid claim their CP-Universal VDU screen filter "suppresses up to 99 per cent of reflected light, reducing glare and improving contrast on virtually all types of display". It is available from Action Computer Supplies at £129.00, and a free pair of Polaroid sunglasses is currently offered by the manufacturer with every screen ordered.

Glass-based for durability, the CP-Universal is a circular polarising filter, with a vapour-deposited, anti-glare layer, and an

anti-static conductive coating.

It is fitted with a hinge-type universal mounting which allows flexibility in fitting, so that only two sizes are needed to fit monitors with up to 15-in screens. The mounting also allows the screen to be easily and quickly removed for cleaning.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel: 0800 333 333.

choose the level of combat resolution, determine spell strength, and select tactics of ranged combat.

Dragon Wars is set in the humid world of Oceana, 85% sea and dotted with islands. The most legendary realm of these isles is Dilmun "the land where the sun sets". Every tale suggests the streets are paved with gold and no one wants for anything. Like so many would be heroes the player's ambition to travel to Dilmun in search of a better life.

At the first port of call the player and his party are dragged from the ship by merciless guards, stripped of their citizen papers, weapons and wealth. These ugly characters are under the command of King Drak of Phoebus, ruler of Purgatory, the underworld. The once kind and King Drake has begun conquering surrounding islands in an

apparent effort to rule Oceana. He has declared, without reason, that qall magic is forbidden. Magic-kers have been slain or have fled into exile. Several islands threaten to unleash their guardian dragons — beasts who are believed to be the mightiest deterrent of attack and the most destructive force in Oceana. Dilmun, the home of all that is best about Oceana, is in jeopardy of self-destruction as chaos reigns supreme. It is up to the player to find out why magic is illegal and to stop Drake's conquest.

In addition to featuring pop up windows and an automapping mode — which does away with the traditional pencil and graph paper mapping, players can use Characters created from Bard's tale I, II, and III.

Price £14.99 only.

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 for your Amiga® with the breathtaking full-screen animation and digitised sound of the original laser-disk game. Improved compression techniques allow Space Ace® to run in 512K with more than three times the number of scenes found in Amiga Dragon's Lair®.

Available now for only £44.95.

Distributed in the U.K. by Entertainment International. Actual Amiga® screens. Also available or coming soon for Atari ST, IBM and Macintosh.



ReadySoft Inc.

AMIGA,
ATARI ST
AND IBM PC

Dragon's Lair, Space Ace and Bluth Group, Ltd. are registered trademarks owned by and used under license from Bluth Group Ltd.; © 1989 Bluth Group Ltd.; Character Designs © 1983 Bluth Group; All rights reserved. Space Ace programming © 1989 ReadySoft Incorporated.

EMPIRE SOFTWARE · 4 THE STANNETTS · LAINDON NORTH TRADE CENTRE
BASILDON · ESSEX · SS15 6DJ · PHONE (0268) 541126



Computers? It's now a dog's life!

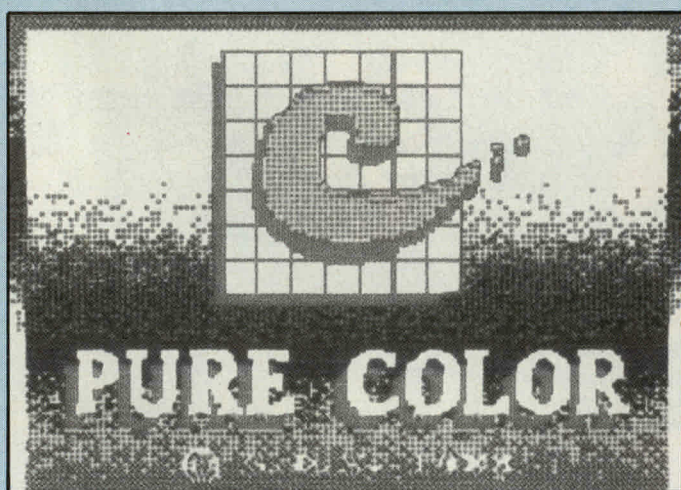
PEDISYS is a system for the breeder of pedigree dogs, specially designed by computer specialists and breeders with enhanced features to provide ease of operation for those new to the computer world.

PEDISYS will print out all of the following information by retrieving data already

stored in three main areas – these are database files for 1) Animal, 2) Breeder and 3) Purchaser details:- includes

– Dogs name – Date of birth – Breed – Colour – Kennel Club No – Family tree details – Family tree line.

Contact: Pedisys, 1 Parsons Walil, Stewkley, Leighton Buzzard, Beds, LU7 0HQ. Tel: 0525 240300.



Pure Color for the Amiga

Tired of guessing what screen colours will look like when translated by your colour printer? With PURE COLOR, the guessing is over! PURE COLOR lets the artist know exactly what

colour will be printed without experimenting with different palette settings.

PURE COLOR is a collection of printer palettes designed for graphic artists or anyone with a need for

Think Again, Again, Old Boy!

We had a call from UK software house Again and Again, long distance from Australia they claimed. What they said went like this: "G'day Cobbers, now here is your very own opportunity possums to take part in the worlds most aggressive team sport. The sun's shining and the Aussie crowds are eagerly awaiting what promises to be an electric game of Aussie Rules footy.

Team's from New South Wales, Queensland, Victoria and South Australia, fight their way and I do mean fight in two completely separate games to be at the toup of this tough Aussie all action league.

Battle it out in the Out-back Amateur League making sure you don't get grabbed by the Wallabies, or Cobbers if you're an even tougher footy player,

flip the cassette "down under" so to speak, where more teams compete over an even more tougher explosive season to climb 'the U.F.L. Victorian Football' league to win the prestigious Victoria Cup.

So Cobbers stop trying ya kangaroo down sport, stop waltzing with Matilda and leave the Sheila's alone too. You need a plentyful supply of Amber Nectar, the Shrimps on the barbie and switch off Neighbours and get down to some real action sport stuff 'Aussie Rules Football'.

G'day to you all possums! "It is time that UK people stopped thinking about 'down under' and clichés and stereotypes, don't you think? Or to sell British software do Australians have to be given the idea that in the UK we all wear bowler hats and sleep with our umbrellas?"

Freezer Screamer

The 'Audio & Video Guard' anti-theft alarm, is a compact security unit for protecting appliances that are connected permanently to the mains.

Ideal for videos, microwaves, computers, hi-fi, and freezers, it can be quickly fitted.

The unit is based on a electromagnetic current sensing strip which detects the absence of electrical

power in the event of the appliance being switched off, unplugged or if the cable is cut.

The result is a loud piercing alarm that will sound for 45 seconds deterring any would be thief, and alerting the household. It will automatically cut off and reset.

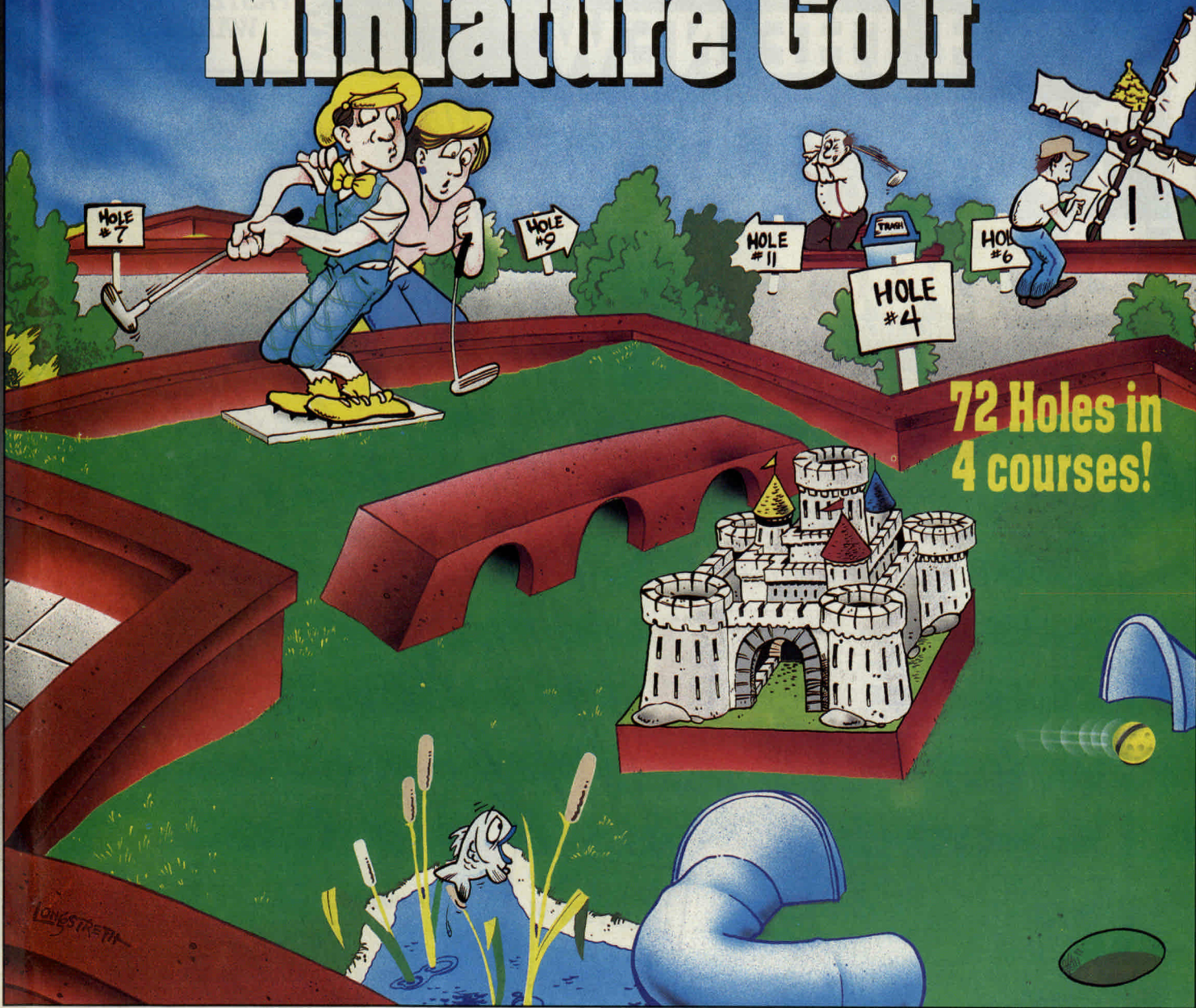
This appliance requires no wiring and is powered by a P33 battery. Price £14.95p.

colour hard copies. Each IFF screen holds 32 different colours or shades of colours that can be printed to give the Amiga artist a convenient colour chart for quick reference. Each colour is clearly labelled with the numeric setting for RGB. There are over 500 different colour settings as well as 160 dot pattern settings (PURE COLOR will let the user manipulate the dot pattern created by any type of printer) and a newly added Qusi-HalfBrite chart. (Simulates 120 colors per hi-res screen.)

Although PURE COLOR was designed for Ink-Jet

printers, it works well with any type of printer. (PURE COLOR prints at the printers highest resolution and is only limited by the number of colors that the printer is capable of producing.) PURE COLOR is not a printer driver but a collection of IFF compatible screens that are used as a color reference guide. PURE COLOR was designed by graphic artists using Delux Paint II and is compatible with Amiga DOS 1.3. Price £17.95. Contact: Graphic Design Studio, 417 Transcontinental Dr. Metairie, AL 70001 United States. Teo 504 455 0341.

Hole-In-One Miniature Golf



**72 Holes in
4 courses!**

Hole-In-One Miniature Golf combines digitized sound, quality graphics and superior playability with realistic ball play to give you the best miniature golf game made!

Utilizing the mouse (point and click) interface, DigiTek Software has created a game that will challenge adults yet is so simple to play that children can play as easily as adults from the very first game. This game supports up to 4 players making it one of the few games that the entire family really can enjoy together.

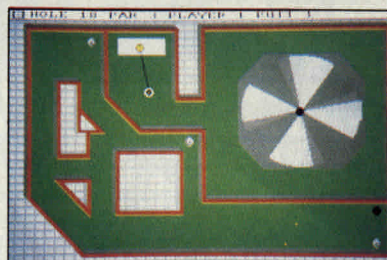
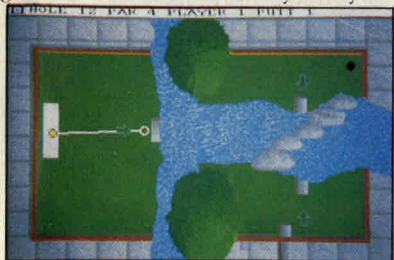
Hole-In-One Miniature Golf is 144 Holes of pure fun in 8 separate courses that give you classic miniature golf as well as hilarious fantasy holes. The digitized sounds of the crowd, the ball, and special effects all add to the fun and realism.

Another revolutionary game from the company that brought you Vampire's Empire, Amegas and Hollywood Poker — DigiTek Software!

£24.95

**DigiTek
Software**

Brooklands, New Road,
St Ives, Huntingdon,
Cambridgeshire PE17 4BG
Telephone: (0480) 496497.
Fax: (0480) 495605



Amiga versions shown here

BACK-UP AND TRANSFER PROGRAMS FROM
DISK TO TAPE ▶ TAPE TO DISK ▶ DISK TO DISK ▶ TAPE TO TAPE.

LAUNCH AHEAD! WITH THE NEW ROCKET POWERED Expert

CARTRIDGE

INCLUDING V4.1R SOFTWARE

COMPLETE BACK-UP SYSTEM

ROCKET — A SUPER-FAST DISK TURBO LOADER.

- LOADS INDEPENDENTLY OF THE CARTRIDGE
- RELOAD ON AVERAGE BACK-UP IN 6 SECS.
- LOADS ANY SIZE OF FILE.
- ONE FILE FORMAT.

ROCKET LAUNCHES THE EXPERT AHEAD
OF ALL OTHER BACK-UP CARTRIDGES
AND COMES **FREE** ON DISK,
WITH EVERY EXPERT.

MAIN FUNCTIONS.

- FREEZES ALL PROGRAMS.
- CREATES A BACK-UP ONTO DISK OR TAPE
- REGARDLESS OF WHETHER THE ORIGINAL WAS LOADED FROM DISK OR TAPE.
- INDEPENDENT TESTS SHOW THE EXPERT TO HAVE THE MOST EFFECTIVE COMPACTOR SO YOU CAN SAVE MORE GAMES PER DISK AND HAVE FASTER RELOADING.
- SAVES A BACK-UP IN ONE FILE.
- EXPERT IS NOT NEEDED FOR RELOADING A BACK-UP
- PROGRAMS RELOAD IN LESS THAN 10 SECONDS USING NEW ROCKET LOADER.

HOW TO ORDER :

BY MAIL: SEND INTERNATIONAL
MONEY ORDERS OR CHEQUES
MADE OUT TO:

HOWARD GILLINGS, H.P.D., 7/100 HEWITSON
ROAD, ELIZABETH WEST, SOUTH AUSTRALIA 5113.

OR: USE YOUR VISA CARD MAKING SURE YOU GIVE
THE EXPIRY DATE AND ALL NUMBERS
BY PHONE 61 8 252 3300 BY FAX: 61 8 252 4755

WE MAKE YOU THE EXPERT

NOW
FASTER THAN
WARP 25!

'HIGHLY
RECOMMENDED'
C.C.I. REVIEW —
JUNE '88

ONLY
£40.00
POST FREE

UTILITY FUNCTIONS

- SPRITE SAVER & EDITOR WITH 'ANIMATOR'
- INFINITE LIVES COMMAND
- JOYSTICK AUTOFIRE MODE — EVEN BETTER THAN AUTOFIRE JOYSTICKS.
- JOYSTICK PORT SWAP — YOUR BACK-UPS CAN USE THE SAME PORT.
- POWERFUL & PROFESSIONAL 64k M/CODE MONITOR.
- PRINTOUT HIRES & LORES SCREENS.
- EXPERT EXPRESS — USE THE EXPERT AS A DISK TURBO LOADER.

UPGRADABLE.

Only the EXPERT comes with its operating software on disk or tape, making upgrading both simple and inexpensive — just look at our competitors ads to see how much THE EXPERT'S rivals cost to upgrade.

THE PROFESSIONALS CHOICE — WIDELY USED BY LEADING SOFTWARE HOUSES

The EXPERT is highly acclaimed by all leading programmers for its ability in help producing all the best games. Even a major budget software house uses THE EXPERT — although they don't like to admit it . . .

EDUCATIONAL

The EXPERT is a great learning aid, it is ideal for getting to grips with machine code. The powerful monitor enables you to inspect the entire 64k ram plus the roms, plus the input/output chips, plus the processor registers, plus zero page. You can disassemble machine code, alter, transfer, compare, search, fill and load & save. There are hex to decimal & decimal to hex conversation commands, plus an Assemble command so that you can write your own machine code programs. In all, over 29 commands are available.

THE UNIQUE EXPERT — THERE IS NOTHING QUITE LIKE IT.

If you are used to conventional cartridges you may find that THE EXPERT takes a little getting used to. You see, it uses a RAM chip and is programmed before use from disk or tape, this takes only a few seconds, but means that it is very simple and easy to upgrade THE EXPERT, unlike conventional cartridges. We are confident that within a very short time, like thousands of other EXPERTERS worldwide, you'll agree that THE EXPERT is the best thing you've bought for your 64. Should you not be satisfied, then return it within 10 days for your money back.

**FREE EXPERT
UTILITY DISK WITH
EVERY V4.1R EXPERT**

Citizen's ProRange

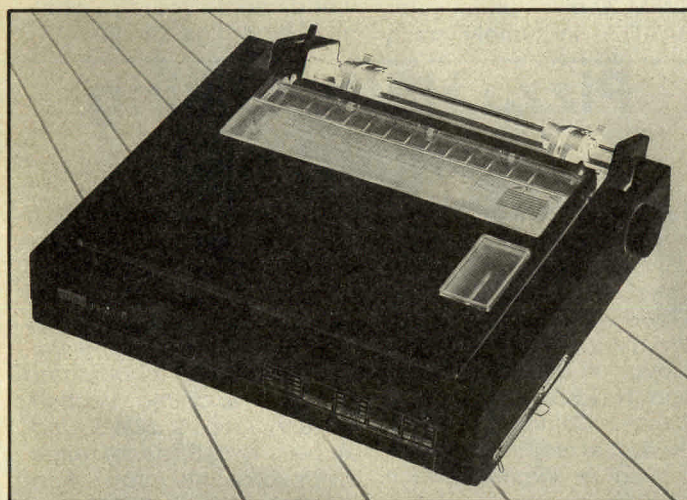
Citizen Europe have launched a new range of printers called the ProRange. Designed to meet the needs of the professional business user, the range will initially comprise three dot matrix machines — The ProDot 24, ProDot 9 and ProDot 9X.

The ProDot 24 has been designed to meet the needs of medium to large business users and costs £599 RRP (exc. VAT)

Printing at speeds of 240 cps (12 cpi) in draft

used to save page formats or even to store an additional downloaded font. Standard memory is 24K.

ProDot 9 and ProDot 9X
The ProDot 9 and ProDot 9X are the 9-pin models in the new Citizen ProRange — both printers are targeted at users who require top quality combined with high speeds, reliability and ease of use. These machines are for heavy usage with an RRP of £439 and £559 respectively (exc. VAT).



quality and 79 cps in letter quality, the ProDot 24 — an 80 column, 24 pin printer — is both fast in output, allowing the handling of heavy workloads, and high in quality utilising Citizen's 24 pin printhead technology. It is targeted at the professional user, government departments and higher education.

Five standard fonts in letter quality and two in draft allow the user to select their favourite or company standard font and with the introduction of an optional colour kit, can begin to design and mould the look of their document. A variety of print styles can be selected including 'quad print' (extra large print) which is useful for headings and a graphics capability of 360 x 360dpi.

The ProDot 24 has a non-volatile memory which will hold information even when the printer is switched off. It can be

The ProDot 9 features an 80 column carriage and the 9X a wider carriage of 136 columns. Both models offer speeds of 300cps (12cpi) in draft and 60cps in NLQ — approximately 12% faster than the closest competition.

ProDot 9 and 9X offers three residential fonts in Near Letter Quality and one in draft. A host of typestyles includes a new 'quad print' feature allowing quad height and quad width printing benefitting headlines and title printing. Print commands including the choice of condensed, expanded, reverse printing and proportional spacing are all selectable through a colour coded, easy to use control panel.

Memory capacity is 8Kb, on which the user can download his/her own characters.

Contact Citizen on 0895 72621.

C64 Sentinel Worlds

Electronic Arts has announced the release of *Sentinel Worlds: Future magic*, a role-playing game for the C64.

Sentinel Worlds is a game that E.A. tells us shows that characters in a fantasy game can be as rich as characters in a novel. "The program has strong graphics with smooth animation, and benefits from sound track and special effects to enhance the action.

It takes players to a 3-planet system that is constantly harassed by raiders from an unknown source. As players explore locations on starships and planets, the screen dis-

plays a map of the person view of the terrain, one of the 85 animated character pictures, motion and radar scanner data and information on weapons, communications or combat.

Sentinel Worlds allows the player to build a team of five with their own unique traits, experiences and appearance. Team strategy depends on the traits and the traits and the training program the player chooses. Dynamic characters and conversations lead to rich personal interactions. The program allows the player to interact with non-player characters who have individual personalities. Price, £14.99 disk only.

SSI's Stellar Crusade

Strategic Simulations in the US has released the Amiga version of *Stellar Crusade*™, the popular space/science fiction game by Norman Koger, Jr. *Stellar Crusade* is an intermediate to advanced level game for up to two players.

Stellar Crusade is a strategy game of exploration, economic power and military conquest on an interstellar scale. Two fanatical groups embark on a mad race to control a small, but vital star cluster. As the leader of one faction, your first task is to send out exploration teams to grab the best planets in the star cluster and colonize them. Next, you must build up

your economic strength to prepare for war. This entails allocating raw materials and production points to build shipyards and maintenance facilities; train and supply troops, engage in research and development; establish farms, mines, refineries and factories. To win a star war, you need starships. Design your own and equip them with a host of offensive and defensive weapons.

There are seven different scenarios with multiple levels of difficulty: three short, three medium, and one long campaign that spans decades.

Price: Amiga \$54.95. PC \$49.95.

Star's 9-pin and 24-pin printer

The *Star Professional Printer Range* includes two 9-pin and two 24-pin machines, all offered substantially below MRP with two-year warranty. All feature the *EE-Prom Memory Switch* and advanced paper parking, and options include serial interfaces and colour kits.

The XB24-10 (left) and XB24-15 have 24-pin heads using a 48-pin pattern to

produce high-quality output. Print speeds are 240cps draft and 80 cps LQ. Features include 25 resident fonts, with four in LQ mode, a 360 x 360 dpi graphics facility, a 27 KB buffer and OCR/barcode ability.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel: 0800 333 333.

Be nice to Dolphins ... Save the World

Addictive Games launches "Aquanaut", produced by Fissionchip, creators of "The Kristal".

Aquanaut is an interaction arcade adventure, written in the spirit of the 1940's cinema heroes (Buck Rodgers, Flash Gordon et al...), but taking place deep under the ocean, in a maze of underwater caverns and then in the fabled city of Atlantis.

Aquanaut you must: SWIM 20 miles underwater, BATTLE incredibly nasty

creatures, FIND the lost city of Atlantis, AVOID Mutant sharks, swordfish and jellyfish, HUNT for hidden clues, SMASH the Ram-anishi, BE NICE to dolphins and mermaids, SHOOT your way to victory, SAVE the world.

Aquanaut will be on 3 disks. Addictive claim that if you surmount the perils of the deep with clever strategy and slick joystick control, and the underwater world can be yours ... what all of it? Amiga £24.99

Pizza Hut's talking computers

Talking computers are enabling visually-impaired individuals to achieve employment with Pizza Hut. Three visually-impaired individuals are currently employed in the Atlanta area and two are employed in Denver, Colorado. Another individual may soon be employed in Virginia Beach, Virginia.

Pizza Hut's telephone sales and service representative positions require responding to all customer orders on a computer terminal. In order to respond to an order accurately, the sales representative must read as well as enter data on 21 different lines of information.

In conjunction with Ted Henter (Henter-Joyce, INC.) and Jack Gilson (DRS Georgia Sensory Rehabilitation Centre), CRT's John

Goldthwaite substituted a personal computer (PC) for the Pizza Hut computer terminals and installed two software programs. The first, ATeleterm, makes the PC behave like a computer terminal and the second Henter/Joyce's JAWS (Job Access With Speech) reads (with voice) the information on the screen. JAWS was selected for its facilities for creating customized commands. A whole series of commands were also written to enable the user to access any line on the screen with the strike of a single keystroke. The end result: the sighted and visually impaired employees work with equal efficiency and speed!

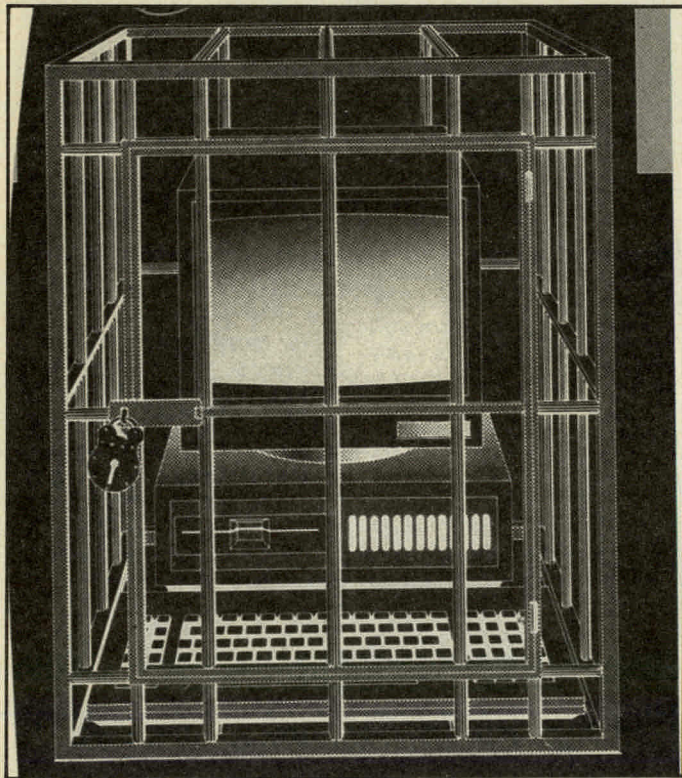
Contact: CRT, Georgia Institute of Technology, 244 Round Street, Georgia, USA.

side of the fax machine. It is supplied complete with a mains adaptor and incorporates all power on LED.

During incoming calls a message welcomes the caller and asks for either a fax transmission to be made or for the caller to hold for connection to a telephone. Faxlink recognises automatic fax machines and immediately routes these transmissions to the fax. For conventional conversation, Faxlink tells the

caller that he is being connected to a telephone. If the telephone is not answered after approximately 10 rings, Faxlink asks the caller to try again later and disconnects the call. A telephone answering machine can be connected to Faxlink.

Contact: Computer Acoustics, 17 East Place, West Norwood, London SE27 9JW. Tel: 01-761 6117 Fax: 01-761 5889. Price: £84.99 including VAT.



There must be twenty ways to keep your data...

To help PC users protect vital corporate data, Price Waterhouse is issuing a free checklist of 20 basic rules for personal computer security, aimed at new and experienced PC users.

Price Waterhouse tell us that their Guide To Personal Computer Security covers housekeeping procedures and security principles which protect valuable corporate and personal data against unauthorised access, corruption and loss. simple procedures recommended in the checklist of housekeeping rules include setting up non-smoking areas

around PCs, and making sure that they are located away from sources of heat such as sunshine and radiators. The guide also recommends security procedures including tight control of communication equipment and software, to minimise the much publicised risks of hacking, as well as implementation of access controls. Eavesdropping and disaster recovery are also covered in the guide.

David Frost of Price Waterhouse is quick to point out: "Although the rules are a good starting point for PC users and deal with the most common problems, they are no substitute for a thorough review of corporate data security".

Dialatron Faxlink

The Dialatron Faxlink allows both a telephone and a facsimile machine or modem to be used on a single telephone line. It incorporates a voice synthesiser and can distinguish between a normal telephone call (voice) and a fax

call (data). It automatically switches incoming calls to the correct piece of equipment.

The Dialatron is no larger than a household box of matches, comes with two self adhesive pads which can attach the unit on the

Special Reserve

Can you afford not to join?

For the serious gamer!

Official Secrets

- Bi-monthly **Buyer's Guide** each with details of 40 games.
- Membership card, Release Schedule and a folder for the Buyer's Guides.
- **24-hour despatch** of stock items. Most lines in stock.
- Games sent individually by **1st class post**. Most fit through your letter-box.
- **7-day hotline**, until 8pm weekdays, 10 to 5.30 Saturdays, 11 to 5 Sundays.
- **Written notification** of delays and instant refunds on request.
- **No commitment**, no obligation to buy anything and no "minimum purchase".
- **The best games, carefully selected, available at extraordinary prices.**

All for just **£5.00**

We're miles cheaper than elsewhere. Below are a selection of offers at prices you might not believe. You can buy games at the same time as joining - or join now and select from our full catalogue. All items advertised are only for sale to members and are subject to availability. Note: Upgrade to **Official Secrets** is offered to members of **Special Reserve**



Members of Official Secrets get all the benefits of **Special Reserve plus:**

• **Confidential.** Our 32 page bi-monthly magazine is essential reading for those interested in adventures or role playing games. Written by experts, **Confidential** has covered everything from How to Host a Murder to Which F16 Flight Simulator? Our agents, led by the Master Spy known as "The Boss Upstairs", seek out the secrets of RPG's, FRP's, MUG's, PBM's, Leisure Suit Larry, The Russians, Elvira....

• **Myth.** Written by Magnetic Scrolls, authors of The Pawn, exclusively for members of Official Secrets. Myth is a small adventure set in Ancient Greece. In it you'll meet The Ferryman, cheat Death and face the nine-headed Hydra. Myth includes the famous Magnetic Scrolls parser and graphics and is included in the price of membership. (Disk only)

• **Help-Line.** Manned weekdays until 8pm and Sundays. The Help-Line can help you solve most problems on most adventures.

• **Gnome Ranger.** Level 9's brilliant 3-part adventure or a **Surprise Alternative.**

Annual UK Membership costs **£22.00**, including six issues of **Confidential**, **Myth**, the **Help-Line**, **Gnome Ranger** and membership of **Special Reserve**.

Amiga Software

ALTERED BEAST	15.99	FIENDISH FRED'S BIG TOP	18.49
AQUAVENTURA	19.99	FISH! (M/SCROLLS)	13.99
BAAL	6.99	FOOTBALL MANAGER 2	8.49
BALLISTIX	6.99	FOOTBALL MANAGER 2 EXP KIT	6.49
BARBARIAN 2 (PALACE)	18.49	FUTURE WARS	16.49
BARBARIAN 2 (PSYGNOSIS)	14.99	GHOSTBUSTERS 2	15.99
BATMAN THE MOVIE	15.99	GUNSHIP	15.99
BATTLE SQUADRON	15.99	HARD DRIVIN'	12.99
BATTLECHESS	10.99	HEWSON PREMIER COLL VOL 1	16.99
BATTLETECH (INFOCOM)	16.49	HEWSON PREMIER COLL VOL 2	17.49
BEACH VOLLEY	15.99	HILLSFAR (SSI)	17.49
BLOOD MONEY	14.49	HIT DISKS VOLUME 2	9.49
BLOODWYCH	15.49	HONDA RVF 750	15.49
BLOODWYCH DATA DISK	9.99	HOSTAGES	8.49
BOMBER	18.49	HOUND OF SHADOW	16.99
CABAL	15.49	HYBRIS	8.49
CHASE H.O.	15.99	INDIANA JONES (ACTION)	11.99
CHRONO QUEST	9.49	INDIANA JONES (ADVENTURE)	16.99
CONFLICT EUROPE	16.49	INFESTATION	14.99
CONTINENTAL CIRCUS	12.99	JOURNEY (INFOCOM)	19.49
CORRUPTION (M/SCROLLS)	13.99	KARTING GRAND PRIX	4.49
DAMOCLES	15.49	KICK OFF	11.99
DEFENDER OF THE CROWN	8.49	KICK OFF EXPANSION DISK	7.49
DELUXE MUSIC CONSTR SET	46.47	KILLING GAME SHOW	12.49
DELUXE PAINT III	51.49	KIND WORDS 2.0 (W/P)	33.49

**AMIGA 500
BATMAN PACK
359.99**

INCLUDING VAT, CARRIAGE & NEW ZEALAND STORY F18 INTERCEPTOR DELUXE PAINT 2 TV MODULATOR

DRAGON'S LAIR (1 MEG)	28.49	PURPLE SATURN DAY	7.49
DRAXKHEN	16.99	RALLY CROSS CHALLENGE	12.99
DUNGEON MASTER (1 MEG)	15.49	ROCKET RANGER	9.99
DUNGEON MASTER EDITOR	7.49	SCAPEHOST (LEVEL 9)	12.49
DYNAMITE DUX	15.99	SHADOW OF THE BEAST	19.99
EDDIE EDWARDS SUPER SKI	6.49	SHOGUN (INFOCOM)	9.99
ELIMINATOR	5.99	SHOOT 'EM-UP CONSTR KIT	18.49
ELITE	13.49	SIM CITY	17.49
EYE OF HORUS	15.99	SPACE ACE	27.49
F16 COMBAT PILOT	15.99	SPEEDBALL	15.49
F16 FALCON	18.49	STEVE DAVIS SNOOKER	12.49
F16 FALCON MISSION DISK	9.99	STRIDER	13.49
		STRIKE FORCE HARRIER	5.49

**Myth
Crash
91%**

Myth Quotes
"An excellent adventure... witty, cunning and just plain good fun! If you liked Fish! you'll probably like this, because they're very similar in style: you may even prefer Myth, it's that good!"
Amiga Format

"Myth is destined to become a classic."
Crash Magazine

Myth Reviews

Commodore User 90%, Amiga Format 87%, TGM 85%

STRIX	12.49	TIME BANDIT	13.99
STUNT CAR RACER	15.99	THE NEW ZEALAND STORY	15.99
SUPER LEAGUE SOCCER	15.49	THE STORY SO FAR VOL. 3	12.99
SUPER WONDERBOY	15.99	THREE STOOGES (CINEMAWARE)	6.99
SWORD OF SODAN	13.99	THUNDERBIRDS	8.49
TALESPIAN ADV CREATOR (1 MEG)	18.99	TIME BANDIT	6.49
TEENAGE QUEEN	8.49	TINTIN ON THE MOON	12.99
TETRIS	4.49	TRIAD VOL1 (COMPILATION)	9.49
THE NEW ZEALAND STORY	15.99	TRIAD VOL2 (COMPILATION)	14.99
TURBO CUP	6.49	TURBO	12.99
TV SPORTS FOOTBALL (USA)	13.49	ULTIMA V	16.49
ULTIMA IV	16.49	UNINVITED	12.49
UNINVITED	12.49	UNIVERSAL MILITARY	14.99
UNIVERSAL MILITARY	14.99	SIMULATOR	15.99
VETTE (CORVETTE)	18.49	UNTOUCHABLES	15.99
VIRUS	12.49	VIXEN	4.49
		VOYAGER	16.49
		WAR IN MIDDLE EARTH	15.49
		WATERLOO	15.99
		WAYNE GRETZKY HOCKEY	15.99
		WEIRD DREAMS	15.49
		WHO FRM ROGER RABBIT (1 MEG)	9.49
		WICKED	9.99
		WORKBENCH 1.3	13.49
		XENON II, MEGABLAST	15.49
		XENOMORPH	15.49
		ZORK ZERO (INFOCOM)	19.49

**SONY 3.5" 79p
DS/DD DISK**

Commodore 64 Disk Software

3D POOL	9.99	KICK OFF	9.99
ALTERED BEAST	9.99	LURKING HORROR (INFOCOM)	6.99
BALLYHOO (INFOCOM)	6.99	MICROPROSE SOCCER	12.49
BARDS TALE 3	11.97	MOONMIST (INFOCOM)	5.49
BATMAN CAPED CRUSADER	9.49	MR HELI	10.49
BATMAN THE MOVIE	10.49	PACLAND	5.99
BATTLETECH (INFOCOM)	10.49	PACMANIA	5.99
BEACH VOLLEY	10.99	POOL OF RADIANCE (SSI)	17.49
BLACK LAMP	4.49	POWER DRIFT	9.99
BLOOD MONEY	8.49	R-TYPE	10.49
BLOODWYCH	8.99	RALLY CROSS CHALLENGE	9.99
BOMBER	12.49	RICK DANGEROUS	9.99
BORDER ZONE (INFOCOM)	6.99	ROBOCOP	10.49
BUREAUCRACY (INFOCOM)	6.99	ROCKET RANGER	12.49
CABAL	10.49	RUNNING MAN	6.99
CORRUPTION (M/SCROLLS)	12.49	SCAPEHOST (LEVEL 9)	9.49
DARK FORCE	12.99	SEASTALKER (INFOCOM)	5.99
DEFENDER OF THE CROWN	9.99	SHERLOCK (INFOCOM)	6.99
DEJA VU	6.49	SHINONI	9.99
DEMONS WINTER (SSI)	13.99	SHOOT 'EM-UP CONSTR KIT	12.49
DRAGON NINJA	10.49	SIM CITY	11.99
DRAGONS OF FLAME (SSI)	10.99	SPEEDBALL	8.99
DYNAMITE DUX	10.49	STAR WARS TRILOGY	12.99
EYE OF HORUS	9.99	STRIDER	10.49
FAERY TALE ADVENTURE	9.99	STUNT CAR RACER	9.99
FISH! (M/SCROLLS)	12.49	SUPER WONDERBOY	9.99
FOOTBALL MANAGER 2	8.49	TETRIS	3.49
FOOTBALL MANAGER 2 EXP KIT	6.49	THE NEW ZEALAND STORY	10.99
GALDRAGON'S DOMAIN	9.49	THREE STOOGES (CINEMAWARE)	4.49
GHOSTBUSTERS 2	9.99	THUNDERBIRDS	9.49
GRAPHIC ADV CREATOR	17.49	TIMES OF LORE	9.47
HEATWAVE (COMPILATION)	10.99	ULTIMA V	15.49
HELLFIRE ATTACK	1.99	UNTOUCHABLES	10.49
HILLSFAR (SSI)	13.99	VIXEN	2.99
INDIANA JONES (ACTION)	10.49	WAR IN MIDDLE EARTH	12.49
INDIANA JONES (ADVENTURE)	10.99	WAR SHIP (SSI)	19.99
INFIDEL (INFOCOM)	6.99	WARGAMES CONSTR SET (SSI)	13.99
IRON LORD	10.49	WHO FRM ROGER RABBIT	6.49
JEWELS OF DARKNESS (LEVEL 9)	5.49	XZOBTS	9.99
		ZORK 1 (INFOCOM)	6.99

To order please write, or complete the coupon, or telephone us on **0279 600204**. Please note that there is a surcharge of 50p per game for orders placed by telephone.

Order Form

Non-members please add the membership fee

Name _____
 Address _____

 Post Code _____ Phone No. _____
 Computer _____ DISK *5.25"/*3.5"/*3.0"

Payable to: **Special Reserve or Official Secrets**
P.O. Box 847, Harlow, CM21 9PH

Special Reserve and Official Secrets are trading names of Inter-Mediate Ltd.
 Reg. Office: 2 South Block, The Maltings, Sawbridgeworth, Herts CM21 9PG.
 Registered in England Number 2054713. VAT reg. no. 424 8532 51

Special Reserve membership £5 UK, £6 EEC or £7 World
 or
 Official Secrets membership £22 UK, £25 EEC or £30 World
 with Gnome Ranger and Myth or with Surprise Alternative and Myth

Item _____ CCI _____ £ _____
 Item _____ £ _____

TOTAL £ _____

Credit card expiry date _____

*CHEQUE/*POSTAL ORDER/*ACCESS/*VISA
 (Including Connect, Mastercard and Eurocard)
 *Delete where applicable

Overseas orders must be paid by credit card
 Prices include UK Postage and Packing
 EEC orders please add 70p per item
 World orders please add £1.50 per item

Dr. T's "Class of the 90's"

Dr.T's Music Software "MIDI Recording Studio" has been chosen to be a part in a new promotion by Commodore UK Class of the 90's is Commodore's latest foray into the education market. Commodore has just purchased its second order of MIDI Recording Studio programs from Dr. T's bringing the total number of packages to 5,000.

Commodore has taken to heart the lessons taught so well by Apple in the US and is moving strongly into the educational field with a package consisting of an excellent collection of useful software packages. These programs, bundled together, are being sold by distributors to the schools in the United Kingdom at a ??? price in an attempt to capture a significant share of the educational market.

Al Hospers, CEO of DR.T's Music Software (one of the world's largest manufacturers of computer music software), said about the education package and the Amiga in general; "This is a great collection of software applications. Commodore

has a strong chance to leap ahead of Apple in the educational computer field now. They have the strong color graphics, sound, and animation that the schools want now for the children. And as far as sound goes, they are way ahead of anyone with their super samples. And of course the built-in multitasking combinations of music and sound. This is a very strong machine!"

This is the first time that an American software house has worked with Commodore UK in this manner. "I think that there are a number of ways software companies can work with the hardware manufacturers to expand the marketplace", says Hospers. "We will be working closely the Commodore both in Europe and the US to expand Amiga computer sales. We feel that The Amiga is the computer best positioned to take advantage of the new surge in multi-media, and we plan to be part of it."

Dr.T's has also announced a number of new products for the Amiga. The Keyboard Controlled Sequencer revision 3.0 which contains numerous

enhancements and revisions including support for SMPTE time code, full intuition interface, and a direct link with other Dr.T's applications through their Multi Program Environment; Phantom SMPTE synchronizer box which allows KCS or other compatible video

and music software to sync to an audio or video tape; and AutoMix, a computer controlled mixing panel for doing automated volume and controller mixes of music. Contact: 220 Boylston Street, Chestnut Hill, MA 02167 USA. (617) 244-6954. Fax: (617) 244 5243.

Red Sunday

On Red Sunday, April 30, 1989, ten newly appointed Vice Admirals competed against the Russians, each other and the clock trying to achieve victory in the Red Alert War Game. The winner would become more than Admiral of the Fleet as victory included a trip for two to the UK and see some of the submarines that are present in Red Storm Rising.

Red Sunday and the Red Alert War Games were the culmination of the Red Storm Rusing Ultimate Challenge sponsored by MicroProse and Commodore Magazine. MicroProse received over 500 completed entries. The 15 top entries were promoted to Rear Admiral. Four Naval Examiners chose ten of the Rear Admirals to be promoted to Vice Admirals to

play the Red Alert War Game on Red Sunday. ON that day, each Vice Admiral had four hours to successfully play 16 different battles. Ranging from tough to nearly impossible, these 16 special battles were created by Roy Gibson of MicroProse US for this event.

Mike Kwiatkowski was the eventual winner, successfully completing 11 out of the first 12 missions with no damage to his submarine. His prize was an all-expenses paid trip for two to the UK to visit, among other places, the Submarine Museum in Portsmouth. Responsible for nearly all of Naval history, from pre-Trafalgar to present day, Portsmouth was the ideal place for 'possibly the best Red Storm Rising Commander in the world' to visit.

Red Storm Falling?

MicroProse's submarine simulation, Red Storm Rising, based around Tom Clancy's best-selling novel of the same name is set for release on the Amiga.

With Tom Clancy providing technical guidance, the computerised Red Storm Rising focuses on the tactical operations of an American nuclear attack submarine in World War III. In the primary game scenario, the USSR is intent upon disrupting the trans-Atlantic shipping of US reinforcements to NATO after a crushing invasion of Western Europe by the massed hordes of the Warsaw Pact. The submarine commander's mission is to locate and destroy Soviet submarines as they leave their base near the arctic

circle, before they can reach the Atlantic.

Sid Meier, MicroProse's co-founder and foremost designer of military computer simulations, who has worked on this project, was also responsible for Silent Service, MicroProse's classic WWII sub sim. According to Sid, however, the difference between the two scenarios is vast. In Red Storm Rising, for instance, you have access to vast amounts of vital information concerning the latest Russian subs, as well as 'smart' torpedoes and sonar that can categorize subs by their acoustic 'signature'.

Throughout the game, the player can access large scale strategic maps and animated screens to ob-

serve how his tactical successes and failures are affecting the progress of the war. Knowing that his efforts affect the overall picture compounds the player's excitement and in-

volvement in the game. Price £24.95. What is going to happen to all these fearsome cold war epics when all the Communist countries go 'West', who will be the enemy then?

Hyperforce is blistering stuff

Hyperforce is a new release from Addictive Games. They tell us, with some enthusiasm.

"Hyperforce is a wicked arcade challenge over 30 levels of hectic, wrist-twisting, finger-bending action. Hyperforce has stunning graphics and sound, and is probably the nearest a home computer owner can come to arcade action without putting coins in a slot.

Hyperforce also includes 5 mind-boggling puzzle levels to twist the mind as much as the rest of the

anatomy".

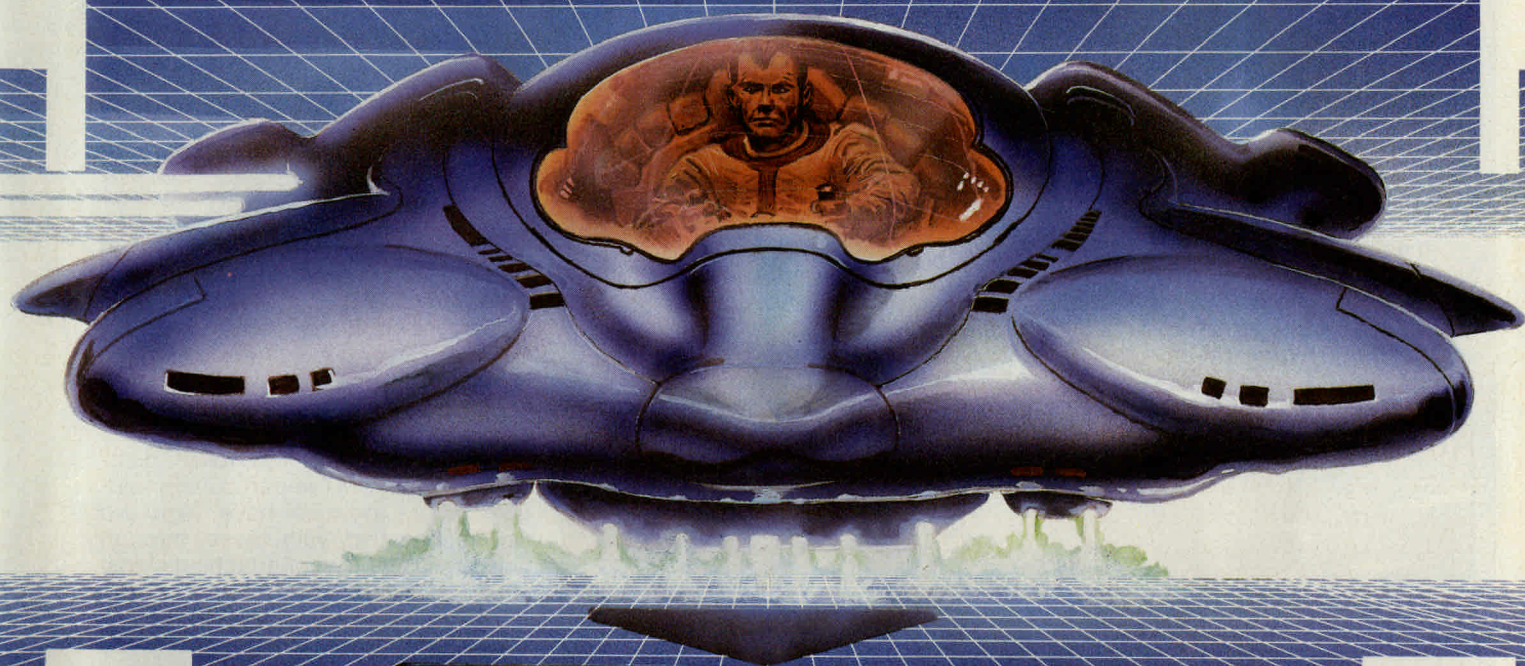
Addictive Games points out that no one should attempt Hyperforce without first warming up their game-playing skills. For this reason every Special Limited Edition pack includes a free warm-up kit: "Artificial Dreams" — a shoot'em up with a MEAN catch 22 twist — to play the game you must shoot your way through a maze, but you must find your way through the maze to play the game ...!

Amiga £14.95

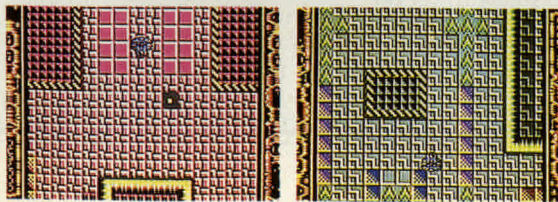
THALAMUS



A DEAD MAN'S
KILLING JOKE...



By Rob Stevens



The Snare: a twenty-level deadly maze built in a temporal cavity by billionaire Andre Thelman who ten years ago entered his creation with his most valued possession — and died.

The hunt for the mystery treasure has turned into the hottest vid game show on earth as contender after contender dies trying to crack the maze's secrets. Will you succeed?

Snare: fiendish, frustrating and deadly — only for the quick-witted!

CBM 64/128

Cass: £9.99

Disk: £12.99

SMT - What is it?

Circuit boards. They radiate little or no charisma, cause many a glassy stare and are, generally, one of the last subjects brought up at parties. However, they are the key to many of the technological wonders we all take for granted. "Fine", you say, "so can I turn the page now?" - Well, hang on a tick because circuit boards are going through an important evolutionary change, just at the moment, which will affect how they are actually constructed. Making them cheaper to produce and to buy. As computers are one of the principle products of circuit boards this will, naturally, mean that computers will cost less to produce. So what's going on then? SMT, that's what.

If you have ever taken a look inside your C64, Amiga or PC you may have noticed two things about the general layout of the chips on the circuit board. Those chips that do not have a plug or

socket into which they can be pushed into are normally soldered onto the circuit board itself. Well, not quite, because if you have ever seen the back of the board you will have noticed that it consists of nothing but spikey bits of wire and solder. In effect, the chip's "legs" have been inserted into numerous holes, specially prepared for it and then they have been fixed to the board by solder. This process of attaching chips to boards is all well and good - was all well and good, that is, until the introduction of SMT - Surface Mounted Technology.

SMT is very simple, in fact you may think "why the fuss?". SMT chips are actually mounted to the *face* of a circuit board. There are no holes involved. A simple, yet very important difference. Malcolm Penn, who is the managing director of a consultancy firm in Sevenoaks agrees, "It sounds like an extre-

mely simple change but it is having far-reaching effects in terms of size, cost and reliability."

Dr. Theo Peek, director of colour television product engineering at N.V. Philips, Eindhoven in the Netherlands summarised the advantages of SMT, "Size is money. Surface Mounted Technology means fewer and smaller printed circuit boards. That cuts costs. It's not surprising that everybody is enthusiastic about SMT. It means improved quality and reliability. That's the reward when you reduce the number of connectors and the wiring on a PCB. A year or so ago, SMT was regarded as expensive. Now, demand for this technology is so big that the volumes are helping to push the prices down. In fact, nowadays, an SMT board is usually cheaper than a conventional PCB."

According to the semi-conductor wing of Siemens AG, in Munich, West Germany the fastest growing sectors of SMT are entertainment, military, high tech and automotive. Siemens senior manager, Werner Maiwald, commented that, "SMT is particularly valuable where devices have high pin counts because, with these, through hole (the usual way of attaching chips) solutions simply don't work. "SMT meets the needs of small companies who want to increase production by automation. They can start with entry-price placement machines that handle just a few tens of thousands of components an hour. This enables the user to acquire experience before moving up in the scale."

Using through-hole technology a company would need two or three machines, which would cost around £800,000. With SMT, the same company can achieve the same performance with a single machine for less than £250,000.

Maiwald added, "Using SMT, it is rare to have bad components on the board. There is no risk, for instance, of diodes being misplaced. We can measure the flow of current and then turn them in the right direction. The same rule applies to capacitors. In our experience, fewer than 20 parts per million go missing or are faulty. This eliminates the need for incoming testing for components."



So SMT is on the up. With the ability to pack more chips onto the board. In addition, if you are not going to be pushing chips through the board then there will be no untidy spiky solder legs protruding out of the other side. This clean smooth back can be easily used, therefore, as a whole new surface for another board full of components. Two boards for the price of one!

With any technology you will find the innovators, the people who take full advantage of the product to gain economic advantage. SMT is no exception. So who has taken this particular bull by the horns? Yes, that's right, Japan.

"There's a fair amount of innovation in Japanese surface mount technology (that is) fueled by the desire to make - as the Japanese put it - lighter, smaller, thinner and shorter consumer electronics products..." says John Stern, vice-president of Asian Operations at the American Electronics Association."

It appears that Japan sees SMT as a tool to enhance the dominance they have over the consumer electronics market. One example, Matsusita Electric Industrial Co. Ltd (who just happen to be Japan's largest consumer electronics company producing, among other

things, disk drives) are actively developing a technique known as Tape-Automated Bonding.

TAB is carried out where a small lead frame forms the semi-conductor printed circuit board interface. At the moment it is expensive to set-up and is not in wide use. However, TAB may allow the integration of SMT to very-large integration devices such as memory chips and microprocessors. Mitsubishi Electric Corp. recently developed the world's smallest 1-Mbyte DRAM which is four times smaller than its predecessors and runs at 70 nanoseconds. An ideal chip for future mini-laptops - are you reading this, Commodore? Apparently this particular chip is already being manufactured to a monthly quota of half a million units. This turnover is hoped to reach two million by the beginning of next year. The price for such a beast? Well it will be priced at four times that of the present large units but lower prices should follow soon.

Another area for investigation is ICs (integrated circuits). TDK, the world's largest magnetic tape producer have announced the multi-layer hybrid circuit. The company stated that, "Our

unique MHC - an equalizer for Walkman-type stereos - contains an IC produced by Toshiba along with 16 capacitors and resistors manufactured by our multi-layer lithographic technology."

Therefore the overall circuit would be smaller, as would its complexity. Smaller Walkmans are produced, therefore, or the company might be able to squeeze another feature in there which may force them ahead of the competition.

SMT is by no means a new technology. It was only used in specific applications and was more expensive to produce than through-hole technology. However, it looks like the time is ripe for companies to take advantage of this simple, yet, effective, technique. SMT is not perfect. There have, in the past, been problems with heat sensitivity and mechanical strength, but these handicaps will sharply decrease during the coming months as new advances are expected to come to fruition. So, as SMT matures, expect to see greater use being made of its potential and more people talking about circuit boards at parties.

P.R.

CESSING · TEXTVERARBEITUNG · TRAITEMENT DE TEXTE · ORDBEHANDLING · TEIOS · ELABORATORE TESTI
 SO DE TEXTOS · ELABORATORE TESTI · WORD PROCESSING · TEXTVERARBEITUNGSITTELY · TEKSTVERWERKII
 SANAN · TEKST · VERWERKING · PROCESO DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION
 TEXTE · VERWERKING · PROCESO DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION
 :ES · VERWERKING · PROCESO DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION
 O DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION
 SAL · VERWERKING · PROCESO DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION
 EXT · VERWERKING · PROCESO DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION
 CESS · VERWERKING · PROCESO DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION
 SO DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION DE TEXTOS · ELABORACION

For a number of years the PC software market has been dominated by either US or UK software houses. The latest release in the Wordprocessor market goes against this tide. CiceroPlus is the wordprocessor package from the Swedish software company RTB Program. The CiceroPlus package has been available in Sweden since 1987 and has sold 5000 units in that country. RTB Program has now opened offices in Fetcham, Surrey so that they can now market the CiceroPlus package in the UK.

The CiceroPlus package itself is a combination of a wordprocessor, a spreadsheet and a database. What then is different about CiceroPlus from the other multi-function packages on the market? Two words - Help Lines, these are a feature unique to CiceroPlus and are used in helping to format the document.

The Help Lines appear on the screen but are not printed, unless required. The lines can either be vertical or horizontal and help to show where on the page a piece of information is to be placed. The lines then make the document take the form of a template from which the list of

possible uses can be endless. Letters, tables, invoices, agendas, databases and even TV scripts. The Help Lines are also used to create columns in a document, which can then hold numeric information, calculations can then be performed within or across the columns. The columns then go to make up the columns of the spreadsheet and can therefore be addressed by use of a letter in the standard way.

The wordprocessor functions are standard and all actions are selected through simple menus or function keys. On loading the software, the text screen is displayed. This again takes a fairly standard format with all but the top line used for text. The top line contains status information about the file being used and the style and position of the current character being typed.

The package includes a number of advanced features such as automatic hyphenation and a mail merge facility, it also includes other features not available on other well known word processors. CiceroPlus holds all deleted text, within a session, in a waste area so that it may be retrieved should the need arise. A window option is also provided

which allows two or more text files to be opened at the same time. Text can then be transferred between the two files. To avoid overwriting a file when in the window mode, the file can be write protected. Finally, CiceroPlus is one of the few wordprocessor packages that supports the use of a mouse for movement within the text. What then does CiceroPlus not have. To begin with it is not a 'What You See Is What You Get (WYSIWIG)' package and therefore Font changes are not visible until the document is printed. It also does not appear to have any text import or export facilities.

CiceroPlus is easy to use and learn and the twenty minutes quoted in the literature is certainly not an idle boast. However, CiceroPlus is by no means a cheap package, at a cost of £295 plus VAT, it is probably excluded from the home market, but unfortunately it does place it amongst the other sophisticated packages popular with business users. It is going to be hard for CiceroPlus to break into an area of the software market which may already be overpopulated with products, but it is certainly a worthwhile package. L.K.

Book Now For
Our Video &
Graphics Course

THE VIDEO SPECIALISTS

Free
Car Phone With
Marked Items
Subject to Status



Our Promise
Except where stated
Our Prices Always
Include VAT and we only
supply first class goods

A590 Hard Drive

With 2MB RAM Fitted For
The Amazing Price of
£599.95 (inc VAT)



A590 Hard Drive

With 1MB RAM at only
£499.95 (inc VAT)

DIGIPRO Professional Video System



Lease
Hire
£127pm
inc
VAT

Amiga 2000 with XT
20MB Hard Drive
2MB RAM
G2 Genlock
Hi Res Colour
Monitor
& Pro Video Plus

Cash
Price
£3218
inc
VAT

Easy Payments

A500 Starter
System
From Only £3.77
Per Week inc
VAT

Amiga 2000 XT
Systems
From Only £47.38
Per Month inc
VAT

Written Details on Request

NEW! Only
£49.95
Elan Performer

The presentation system that puts your
Amiga imagery right at your fingertips!

8MB RAM Boards



8MB
Fitted
£899
inc VAT

4MB
Fitted
£599
inc VAT

2MB
Fitted
£399
inc VAT

DIGIPRO LIMITED

0703 703030 - 01 905 1030

Enterprise House, Howards Grove,
Southampton SO1 5PR
Unless Stated All Prices Include VAT

Orders over £50 Postage & Packing Free
Add £1.00 Postage & Packing for all other orders
Please phone for prices
outside the U.K.



A500 Super Home Video System

Hire
Purchase
from
£6.29
pw

FREE 512K RAM
& Titling Software
With Amiga A 500
8802 Genlock
Titling Software
& Modulator

Cash
Price
£699.95
inc
VAT

**FREE Video and Genlock
Information Packs Available.
Call Now For Yours!**

Authorised Commodore Amiga Dealer

Dealer, Export, Government, MOD and Educational Orders Welcome
Hire-purchase and leasing finance available. Digipro are licensed credit brokers.

DIRTY MAINS

Are you suffering from "spikes and surges"? No, don't consult a doctor, says Natalie Green, go for "safe computing" with suppressors

If somebody were to tell you that you could be suffering from a problem that could cause you anything from a minor inconvenience (interruption in the middle of your favourite computer game) to a major catastrophe (such as the premature breakdown of your computer with the destruction of valuable software or data) you would, no doubt, be interested. There is a common cause to these situations, and many more, which can be eradicated with relative ease and little cost.

"In many cases these problems are caused by what is commonly called "dirty mains" "

In many cases these problems are caused by what is commonly called "dirty mains" - electrical pollution in the supply. This, in engineering terms, is called, most commonly transient spikes, voltage spikes or voltage surges. The definition of a spike is a voltage pulse that exceeds the normal line voltage (in the U.K. the line voltage is 220/240 volts A.C.). Although these spikes are normally of a very short duration (up to several microseconds) they can wreak havoc on sensitive equipment.

Clearly such spikes are likely to be of interest to computer users, as they can be responsible for damage to both hardware and data (in memory, on magnetic media or during transmission).

THE CAUSES OF THE PROBLEM

Spikes can be caused either locally or from a distance. The most common local cause is the switching of any in-

ductive load, especially equipment with electrical motors such as washing machines, fridges, power tools and many other household items. Other items in the home can cause voltage spikes by switching effects, especially appliances such as immersion heaters and other items where the use of a thermostat means that a sharp "make" or "break" in the circuit does not occur.

Industrial premises, whether office or factory, also have equipment which generate spikes. However due to the nature of the equipment involved, the energy contained on each spike is higher than encountered in a domestic environment and thus the risk of damage greater. Relays, transformers, solenoids and solid state A.C. switches can also be responsible for spikes.

These problems are compounded by the voltage spikes that are created externally to our homes and business premises. A very common problem is that of one user "exporting" spikes to neighbouring properties, especially to those unfortunate people who share the same phase of the 440 volt supply.

"The electricity suppliers are also responsible for spikes and voltage fluctuations."

The electricity suppliers are also responsible for spikes and voltage fluctuations. Power line over voltages are caused by the Electricity Areas switching lines to optimise the usage of their generating equipment during off peak and peak demands for power. When under voltages are corrected during brown-outs and black-outs there is

usually a high voltage surge as correction to the supply is made.

Another cause of transient spike production is by lightning strikes being transmitted through power lines. Even distant lightning strikes can cause the spikes to travel several miles through power lines. A direct lightning hit, although the least likely to occur, is the most catastrophic and can add thousands of volts to local power lines.

Another form of transient creation is that of power overload, short circuit or the sudden earthing of an electrical circuit.

THE EFFECT OF SPIKES

Warning! Those of you of a sensitive disposition are advised to skip this section, as it is not pleasant reading!

The more complex a piece of equipment, the tighter the tolerances to which it is designed and built. This means the equipment around us is becoming more and more sensitive to the possibility of a sudden voltage fluctuation. There is a "trade off" between the benefits of modern technology and the price to be paid.

The old thermionic valve, for all its faults, was relatively robust and easily replaced when it went wrong: not so the increasingly complex microchip!

Any chip, regardless of design, is vulnerable to a voltage transient, which can cause the development of "hot spots". This can either bring a temporary disruption of the electron flow patterns, or in extreme cases lead to localised melting which permanently destroys the circuitry.

Transistors and similar components are not immune to spikes, as they are subject to thermal runaway leading to

continued on page 22

continued from page 21



possible burn-out.

Cathode ray tubes found in televisions and computer monitors are also susceptible, as the associated circuitry under the influence of a spike can cause a momentary blackout of the picture of a brief overload of the electron guns. In either case the life of the tube is shortened. Electro-mechanical components suffer from the welding of contacts when "hit" by a spike.

Breakdown of insulation can also be caused by a severe spike causing arcing of components. This can lead to the shortening of component life and subsequent breakdown of equipment meaning expensive repairs. In the case of computer equipment the problem could be even greater with the loss of data stored in memory, read/write errors on floppy or hard disks. Where semiconductors are subjected to a series of small spikes, these can be interpreted as legitimate input signals, again leading to corruption of data.

BACK UPS AND SUPPRESSORS

All the above makes rather grim reading, but the dangers can be minimised by following some relatively simple guide-lines.

Computer users are among those most at risk from spikes. The need for regular backing up of data on to non volatile media cannot be over-emphasised. However in many cases this is not possible, for example where

software has been protected from copying in an effort to discourage piracy. Therefore a better all round option is to prevent the transient from ever hitting the equipment in the first place. This can be done by the use of a "Surge Suppressor".

The surge suppressor has the ability to absorb energy and react to spikes in nanoseconds but, equally importantly, can recover to absorb further spikes without loss of performance.

Whilst no surge suppressor can guarantee against every size and shape of spike, many different designs with a wide variety of features and capabilities are available. No suppressor will be able to absorb the energy from a direct lightning strike, but under such an extreme circumstance there are likely to be other things on your mind than the effect on your electrical equipment!

There are two main types of suppressor currently on the market. Both are a type of voltage dependant resistor, one being silicon based, offering a very fast response time but low energy rating and poor recovery; the other being metal oxide based, with slower response, high power handling, and good recovery. For normal use the metal oxide type is preferable, as the power handling and recovery advantages easily outweigh the slightly slower response time.

Suppressors also come in a variety of voltage, current and energy ratings.

The higher the energy rating, the higher the cost and physical size. The voltage selection is simple - 240 volts is the normal requirement. A good compromise is a 13 Ampere current rating with a surge current capacity of 4500 Amperes. This gives an energy rating of 225 Joules, and a response time of less than 10 Nanoseconds (one nanosecond is one thousand-millionth of a second). Suppressors of this rating can be fitted into specially adapted plugs or sockets, for ease of use.

NOTE: THESE COMPONENTS DO NOT ACT AS EARTH LEAKAGE "TRIPS", AND DO NOT PROTECT AGAINST ELECTRICAL SHOCK. NEITHER SHOULD THEY BE FITTED TO NORMAL PLUGS OR SOCKETS UNLESS THE FITTER HAS A FULL UNDERSTANDING OF THEIR USE. It is far safer to purchase professionally modified plugs or adaptors than to undertake such modification yourself.

RADIO INTERFERENCE

To further complicate the story, there is the additional problem of Radio Frequency Interference (RFI). Some appliances can broadcast radio waves in the course of their normal operation, a prime example being any device which produces a spark as electrical contact is made or broken. This is in fact the way in which the earliest radio transmitters worked. This radio signal can then be superimposed on the electrical current in a nearby power or data cable which acts as an aerial. The interference will vary in frequency depending upon its cause (between about 100 kilohertz and 10 megahertz). This frequency range is sufficiently close to some of the common frequencies used in data transmission to cause problems. The solution is to fit a filtering coil to reduce the effect to an acceptable level. This coil has to be carefully designed to match the power consumption of the protected device and provide sufficient filtering to be effective without over-reducing the power band-width. This, of course, adds to the cost and size of the unit

RFI and related matters are the subject of several new regulations which are being drawn up by the EEC to come into force in 1992. However some member states are reluctant to fall into line on these issues and therefore the DTI in Britain is planning to announce its own regulations.

While "spikes" are not an everyday occurrence, they are common enough to merit consideration by all serious computer users. Remember, the more highly technical and hence usually more sensitive your equipment, the more it can be affected - and spikes are a more compelling reason for making sure you back up your valuable data. Surge suppressors are certainly worth the trouble if you want to be sure of avoiding damage and data loss.

NG

Power Packed

POWER CARTRIDGE

£14.99

Andy Eskelson opens up - literally - an interesting cartridge that gives the 64 added power...

The C64 and the C128, are equipped with a means of adding external hardware, normally in the form of a cartridge. However the cartridge port is also an expansion port, and can be used for many other things besides cartridges, and I wish that the designers of cartridges would remember that fact, and provide a means of disabling the silly things!

Power Cartridge is a 64/128 cartridge that provides a mixed bunch of functions designed to make programming easier.

Installing the cartridge is easy. Just plug it into the expansion port and switch on, well that is what I did, and it was then that I found the first problem - no video display. I tried resetting. Still no video. I Took a deep breath and switched to 40 column mode. There was a display depicting the power cartridge logo and the dreaded C64 basic... yes the blasted cartridge had done a dirty, and switched into 64 mode!

The commands are divided into several sections, the toolkit, the printer tool and the reset tool. The toolkit is the most useful of the functions, and you get a good range of utility type commands, they are:

AUTO; AUDIO; COLOR; DEEK; DELETE; DOKE; DUMP; FIND; HARDCAT; HARDCOPY; HEX\$; INFO; KEY; PAUSE; PLIST; ILOAD; RENUMBER; REPEAT; SAFE; TRACE; UNNEW; QUIT; MONITOR; BLOAD; PSET; DLOAD; DVERIFY; DIR; DSAVE; MERGE; DEVICE; DISK.

Not a bad selection of commands especially the more unusual commands.

FIND, this is one of the few good find commands, it will only print the line once regardless of how many times the search data appears in that line.

DEEK, DOKE two useful commands, allows 16 bit numbers to be poked and peeked, so you don't have to use that clumsy poke lo poke hi method when setting up addresses.

HARDCAT, HARDCOPY and **PSET** are printer functions, allowing direct listings to a selection of printers including printers connected to the user port.

RENUMBER is a masterpiece, it allows you to shift blocks of program about, and it gives good warning if lines will be overwritten, as well as the normal renumber functions.

AUDIO is a nice touch for tape users, it displays a line of dashes when data is coming in from the tape drive, as well as switching on the monitor speaker.

The trace command is interesting, not because of any clever functions, but rather because it is one of the worst trace commands that I have seen. All that you get is a display of the line numbers!

I also found a bug in the DLOAD command. When I loaded a basic program in, and tried to list it, I found nothing at all. I then tried a LOAD "name",8 and that worked as normal. When I saved a program and reloaded it with DLOAD it worked fine. I suspect that the DLOAD command will not accept C128 prog-

rams, because they are loaded at \$1300 rather than \$800. A rather silly bug.

Another bug with DLOAD is that it did not like DLOAD "name",9 at all, in fact it simply went to device 8 and looked for the file there. This may be a bug, or it may be that it is not an implemented feature. The handbook DOES NOT specify that you can use other device numbers with DLOAD, if this feature has been left out it should be programmed in!. The Power cartridge allows the use of other devices with the normal LOAD "name",dn commands.

The Power Cartridge gives the programmer a much faster disk access speed, claimed to be up to 5 times faster. I found that 2 to 4 times faster was produced depending on the file and where it was on the directory.

Tape users have not been forgotten, as they get 10 times faster loading and saving times

There is one other thing that I find very odd about the Power Cartridge, and that is the DISK commands. this allows the disk to be accessed with the format DISK "I" for initialize etc. I have to ask why the more standard BASIC 7 commands not used, such as SCRATCH, RENAME etc

All fast load functions can be disabled either by using the QUIT command or by specifying a high device number 48 in the case of disk device 8, so there should be no clashes with other software.

MONITOR

You get a very nice, but fairly standard

continued on page 24

continued from page 23

monitor with the Power Cartridge. The main feature is that it is outside the normal address range of the C64 so you can look at any memory range without any problems. Other than a modified load and save command to allow the use of slow or fast save/loading, there is nothing special about the monitor.

BACKUP

The backup or RESET functions of the Power Cartridge are quite reasonable. Essentially they take a snapshot of the memory and save it to disk. There are several options that will modify the amount of data saved, depending on the program in memory at the time. This function also works for tape users, so it is very useful.

PRINTING

The Power Cartridge has a very comprehensive printer support system, it will allow the printing of screens and listings with several options as to what type of output is produced and where the printer is connected. This is one of the more useful functions of the Power Cartridge, and it is very well programmed. There are options that take into account if the user port is connected to something else, to lock out the user port from the Power Cartridge, which will

also prevent any conflicts. The centronics driver makes use of the user port, and cannot be used if you are employing the user port for something else!

You can control quite a few printer functions such as auto CR/LF case conversion and device numbers. There is also a transparent mode so that you can drive the printer directly.

THE HARDWARE

The Power Cartridge is a small size cartridge made of a slightly soft plastic, that should be shatter proof. Opening up the Power Cartridge I was pleasantly surprised at the quality of construction. The P.C.B. is a high quality fiberglass plated through hole unit. Good quality solder resist has been used and the standard of workmanship is very high. The heart of the Power Cartridge in a 6810 CPU. This is similar to a cut down 6510 and it provides the processing power that the Power Cartridge needs.

The ROM is a 16K device this is NOT in a socket, so there is no way to upgrade the unit other than to send it back to the factory. The glue logic is provided by a few standard 74 series logic chips. The Unit is fairly compact and the layout is very neat. Apart from the odd resistor and the reset switch that is just about all there is to it. There is only one thing that I don't like about the construction, and

that is the edge connector. It is a standard tinned type, I would have preferred a gold plated connector, but you cant have everything!

HANDBOOK

This is going to be the shortest comment about a handbook that I've made in a long while!


Its a damned good handbook... 'nuff said.

CONCLUSION

The Power Cartridge is a good product, but ONLY FOR C64 USERS. It is very inconvenient for C128 users as it inhibits the C128 mode completely. It also lacks the ease of use of the basic 7 command set.

C64 users on the other hand will find the Power Cartridge very useful indeed. It provides a nice set of commands as well as a good tape and disk turbo system. The backup functions are agreeable to possess, but they may have problems with some programs, especially multi part programs (as stated by the handbook). The Power Cartridge is not as versatile as the Expert, but it is there all the time, you will not lose the functions if you switch off the computer. Highly recommended for C64 users, C128 users can forget it unless they work in C64 mode 99% of the time.


A.E.



PHONE
0603-812416

HAMMERSOFT

PHONE
0603-812416



AMIGA MAIL ORDER SPECIALIST

**AMIGA A500 + PHILIPS
8833 STEREO MONITOR
ONLY £609**

BEST SELLERS

ALTERED BEAST	16.90
BATMAN THE MOVIE	16.90
BLOOD MONEY	16.90
BLOODWYCH	16.90
DAMOCLESE	16.90
DRAGON NINJA	17.90
DRAGONS LAIR (1 MEG)	34.90
DUNGEON MASTER	17.90
F-16 COMBAT PILOT	16.90
FLIGHT SIM II	26.90
KICK-OFF I	13.90
LORDS OF THE RISING SUN	21.50
MILLENIUM 2.2	17.90
NEW ZEALAND STORY	17.90
OUTRUN	9.99
POPULOUS	17.90
PROMISED LANDS	8.99
POWERDROME	17.90
ROBOCOP	17.90
RVF HONDA	17.45
SHADOW OF THE BEAST + T-SHIRT	25.90
SHINOBI	14.90
SPACE ACE	32.90
SPACE HARRIER	13.90
SUPER HANG ON	17.90
TRIAD II	17.90
XENON II MEGABLAST	16.90
XYBOTS	15.50

SPECIAL OFFERS (while stocks last)

Backlash	9.99
Better Dead Than Alien	11.99
Bermuda Project	11.99
Crash Garrett	3.99
ECO	11.99
Hellbent	9.99
Heroes of the Lance	16.99
Major Motion	9.99
Manhattan Dealers	11.99
Mercenary	9.99
Netherworld	9.99
Pandora	11.99
Phantom Fighter	12.99
Platoon	14.99
Powerplay	12.99
Sky Chase	9.99
Zynaps	9.99

LEISURE

Cabel	17.90
CASTLE WARRIOR	16.90
Continental Circus	14.90
Dragon Spirit	14.90
Driving Force	17.90
Elite	16.90
Future Wars	17.90
Games Summer Ed.	17.90
Ghost Busters II	17.90
Hard Driving	17.45
INDIANA JONES LAST CRUSADE	14.90
Infestation	16.90
Interface	17.90
It Came From The Desert (1 Meg)	21.50
IVANHOE	17.90
Laser Squad	14.90
Never Mind	13.90
Oil Imperium	17.90
PACMANIA	13.90
PAPERBOY	14.90
Pro Tennis	17.90
Power Drift	17.90
ROBOCOP	17.90
SILKWORM	14.90
Speedball	17.90
Stryx	14.90
STRIDER	17.45
Stunt Car	17.90
TARGHAN	16.90
Test Drive II (The Duel)	17.90
Tintin	14.90
UNTOUCHABLES	17.45
Vigilante	14.90
Xenomorph	16.90

ADVENTURE & SIMULATION

BATTLE CHESS	17.90
Battlehawks 1942	17.90
Bomber	21.50
Colossus Chess X	17.90
Conflict in Europe	17.90
DUNGEON MASTER (1 MEG)	17.90
Fairy Tale Adventure	14.90
F-16 COMBAT PILOT	16.90
F-16 FALCON	21.50
FALCON MISSION DISK	14.90
Federation of Free Traders	21.50
Flight Sim II or JET	26.90
Japan or Europe Scenery Disk	13.90
INTERCEPTOR	17.90
JOURNEY	21.50
KEEP THE THIEF	17.90
Lancaster	17.90
LEADERBOARD BIRDIE	17.90
QUEST FOR THE TIME BIRD	21.50
Red Lightning	21.50
Scrabble Deluxe	14.90
SWORDS OF TWILIGHT	21.50
UNIVERSAL MILITARY SIM	16.90

GRAPHICS & MUSIC

Videoscape 3D 2.0 (PAL)(1MB)	119.00
Deluxe Paint II (PAL)	39.90
DELUXE PAINT III (PAL)(1MB)	59.90
Digipaint III (PAL)	59.90
DIGIVIEW GOLD (PAL)	129.00
Fantavision (PAL)	34.90
Mingen Genlock (PAL)	99.90
PHOTON PAINT (PAL)	35.00
PHOTON PAINT II (PAL)	66.90
Pro Video Plus	179.00
SCULPT OD XL (PAL)	119.00
Sculpt 4D Animate	369.00
SCULPT 4D JNR (1MB)	99.90
Turbo Silver	98.90
TV Show (PAL)(1MB)	69.90
TV Text (PAL)	69.90
Aegis Video Titrer (PAL)	84.00
Aegis Sonix 2.0 (2 drives)	49.90
Amrax Digitiser	74.90
Deluxe Music	49.90
FutureSound Digitizer	79.00
MUSIC X	169.95
Nidi Master Interface	32.95
Rock & Roll Disk Extras	9.50

AMIGA A500 BATPACK
Inc TV Modulator, Batman, Interceptor,
New Zealand Story & Deluxe Paint II
£369.00

BUSINESS

Kindwords II	38.90
Excellence!	159.95
Home Office Kit	126.90
PROTEXT II	66.90
PAGESSETTER V1.2	64.90
Pagestream	119.90
Professional Page V1.3 (1MEG)	169.90
Publishers Choice	73.90
Word Perfect V4.1	159.90

QUALITY JOYSTICKS

Cheetah Mach I	13.50
Comp Pro 5000	13.50
Comp Pro Extra (clear)	14.90

HARDWARE U.K. ONLY

AMIGA PACK 1: AMIGA A500 BATPACK Inc. TV Modulator, Batman, Interceptor, New Zealand Story & Deluxe Paint II - 23 Games - 16 Day Free Holiday .369.00

AMIGA PACK 2: As in 1 with 5 EXTRA GAMES .389.00

AMIGA PACK 3: As in 1 with TENSTAR PACK .389.00

AMIGA A500 & PHILIPS MONITOR .609.00

A501 1/2 MEG EXPANSION/CLOCK .129.90

NEW 1/2 MEG EXPANSION/CLOCK .99.00

CUMANA 3.5 1 MEG DRIVE .95.00

SENATOR 3.5 1 MEG DRIVE .95.00

STAR LC-10 PRINTER .159.00

STAR LC-10 COLOUR PRINTER .209.00

STAR 24 PIN PRINTER .259.00

BRANDED DISKS x 10 inc Labels .119.95

**STAR LC10 COLOUR
PRINTER ONLY £209**

PLEASE SEND CHEQUES/POSTAL ORDERS TO:
HAMMERSOFT, DEPT C, 47 MILL ROAD,
HETHERSETT, NORWICH,
NORFOLK NR9 3DS

MORE TITLES AVAILABLE ON REQUEST

ORDERS/ENQUIRIES: PHONE (0603) 812416

* = AVAILABLE ON RELEASE
PRICES ALL INCLUDE VAT & 1st CLASS
POSTAGE IN U.K. (EUROPE PLEASE ADD £2.00
PER ITEM)

ACCESS, EUROCARD, MASTERCARD AND VISA ACCEPTED

RETURN OF POST SERVICE ON STOCK ITEMS

FIRST micro

**HARDWARE & SOFTWARE
SPECIALISTS**
NEW! SHOWROOM
13 LANSDOWNE RD
BOURNEMOUTH
DORSET BH1 1R2

PRICES INC.
V.A.T
FREE
DELIVERY



EXC. VAT

(0202) 24927



£5 DELIVERY

AMIGA A500 + BATMAN 2

Give away!

BATMAN THE MOVIE
NEW ZEALAND STORY
F18 INTERCEPTOR
Buggy Boy
Ikari Warriors
Barbarian
Thundercats
Terrorpods
Mercenary
Insanity Fight

Art of Chess
Wizball
Amegas
Deluxe Paint II - Mega Paint Package
Microblaster Autofire Autoswitched
Joystick
10 x Blank 3.5" Disks
Mouse Mat

£345

AMIGA A500

INCLUDING:

- MOUSE ● WORKBENCH
- UTILITIES ● MANUALS
- BASIC ● TUTORIAL

£269

AMIGA A500/ 1084(S) MONITOR

£476

AMIGA B2000

INCLUDING:

- MOUSE ● WORKBENCH
- BASIC ● UTILITIES ● MANUALS

£799

AMIGA A500 BATPACK

- NEW ZEALAND STORY
- F18 INTERCEPTOR ● DELUXE PAINT II
- MOUSE ● TV MODULATOR

£320

AMIGA B2000/ PHILIPS 8833

INCLUDING:

- MOUSE ● WORKBENCH
- BASIC ● UTILITIES ● MANUALS
- XT BRIDGE BOARD
- 20 Mb HARD DISK

£1250

A500/A2000 MONITORS

1084(s) High res monitor £209
Philips CM8833 High res £199
1901 C64 - colour Call
1900 C64 - mono £119

COLOUR PRINTERS

Citizen HQ40 £352
Epson EX1000 £543
Hewlett Packard Paint Jet £719
NEC P6+ £469
NEC P7+ £589
Star LC10 £194
Xerox 4020 £949

THE
Star
COMPUTER PRINTERS

LC24-10
£249



LC10
COLOUR
£169

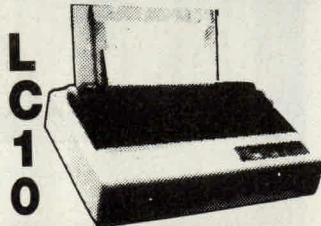
A2000 HARDWARE

A2000 + 1mb RAM £869
A2000 + 1084(s) monitor
+ bridge BD + 20Mb H/disk £1369
A2000 + 1084(s) £1049
20Mb hard disk £299
XT bridge BD £299

AMIGA EXTERNAL DRIVES

Cumana Cax 354E £79
AF880 £78
RF302C £74
Supra 20Mb H/disk £499
★ All drives 1Mb + on/off switch ★

Only £137.00



Hugely successful 9 pin printer, the Star LC10 provides 4 NLQ fonts (with 96 print combinations) at 36cps and 144cps draft. Has a large 4K buffer and IBM/parallel interface built in. Includes a comprehensive front panel operation and features paper parking, allowing single sheets to be used without removing tractor paper.

PRINTERS

Star LC10(P) 130CDS £139
Star LC10 Colour £189
Star LC24-10 (24 pin) £269
Citizen 120D £105
Commodore MPS 1230 £119
Panasonic KXP1124 (24 pin) £279
Panasonic KXP1081 £149
Epson LX800 £158
Epson LQ500 £250
Epson FX850 £409
Epson FX1050 £382
Epson EX800 £369
Epson EX1000 £419

BATMAN SALE

- BATMAN II
- THE NEW ZEALAND STORY
- F18 INTERCEPTOR
- DELUXE PAINT II

£59

LASERS

Citizen Overture £1299
HP Laserjet II £1825

CHRISTMAS SALE

**F501 512K
RAM EXPANSION**

£75 INC VAT &
DELIVERY

ALL PRICES EXCLUDE VAT

**CREDIT CARD MAIL ORDER
AND EXPORT HOTLINE**

(0202) 24927

OPEN MON-SAT 9am-5.30pm

All prices and manufacturers specifications subject to change without notice, please call before ordering.

To: First Micro, 13 Lansdowne Rd, Bournemouth, Dorset BH1 1R2

I wish to order

My computer is

I enclose cheque/P.O. for £ Inc VAT.

Or charge my Access/Visa No. Exp. date

.....

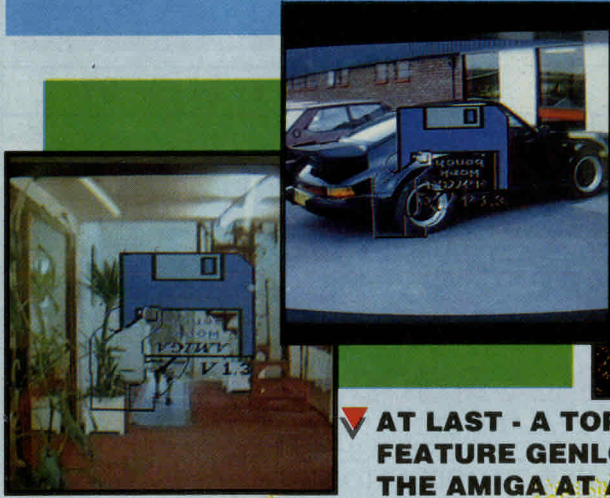
Name Signature

Address

Postcode Tel No:

DATTEL ELECTRONICS

PRO-GENLOCK



▼ **AT LAST - A TOP QUALITY, FULL FEATURE GENLOCK INTERFACE FOR THE AMIGA AT A REALISTIC PRICE.**

PRO-GENLOCK
ONLY £89.99
COMPLETE

- ▼ Genlock is the latest "buzzword" on the Amiga - it's a device that allows you to mix computer text/graphics with live video pictures from either a camera or VCR. "Desk Top Video" as it's become is probably the fastest growing productivity application for the Amiga.
- ▼ With the Dattel Pro Genlock, you can do all the things previously only possible with units costing hundreds of pounds!!!
- ▼ Perfect for video titling, captions or your own animation productions.
- ▼ Lock your Amiga to external colour or B/W video signal (camera/VCR etc) - output is a composite combined picture.
- ▼ Plugs into RGB port of A500/1000/2000. Provides composite video output to monitor/VCR/suitable TV etc.
- ▼ Switch selectable to view video input/overlay graphic or both (combined signal).
- ▼ Top quality unit features VLSI Motorola chip as used on commercial devices.

BUT THAT'S NOT ALL...

- ▼ Unique fader control allows overlay to fade in or out. Ideal for fading captions etc.
- ▼ This is a complete hardware solution - no software to load.
- ▼ Comes complete with necessary leads etc - no more to buy
- ▼ Unbeatable price.

TOO GOOD TO BE TRUE? WHY NOT BUY ONE AND SEE - YOU WON'T BE DISAPPOINTED!



STEREO BOOSTER SYSTEM

- ▼ Boost the output of your Amiga in glorious stereo.
- ▼ 30W + 30W power amplifier with 5 band graphic equalizer.
- ▼ Complete with cables for A500/A1000/A2000 models.
- ▼ Slimline colour matched metal case with built-in mains power unit & headphones socket.

ONLY £59.99

MATCHING SPEAKERS

- ▼ High quality miniature 3 way speaker units in die-cast aluminium shelf enclosures.
- ▼ 30 Watts 8 ohm each.

ONLY £39.99 PAIR



ICON PAINT

- ▼ A unique product to edit and produce your own individual icons.
- ▼ Allows for multi-colour (up to 16) extra large icons for use when customising workbench, disk, icons, tools, programs, etc.
- ▼ Advanced editing facilities make for fast and easy design.

ONLY £12.99



A590 UPGRADES

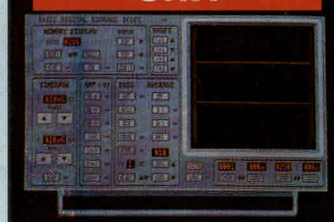
- ▼ If you own an A590 hard drive, then you can upgrade it to give up to an extra 2 Megs of Ram to your system.

ONLY £69.99 FOR 512K (0.5 MEG)

ONLY £134.99 FOR 1 MEG.

ONLY £259.99 FOR 2 MEGS

DATA ACQUISITION UNIT



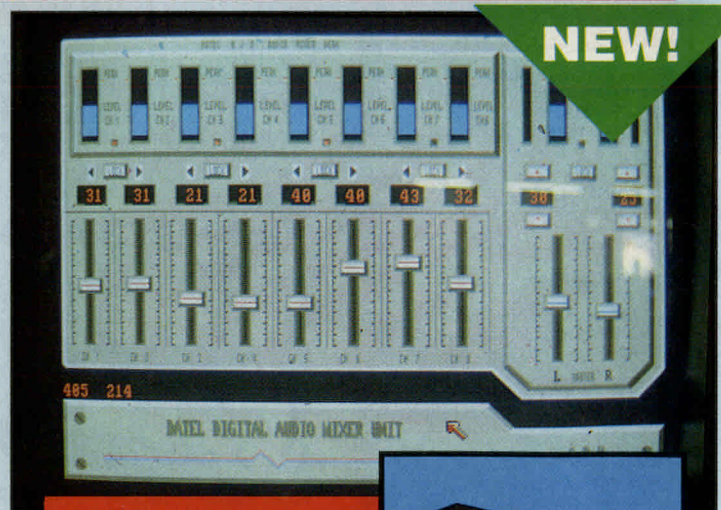
- ▼ Turn your Amiga into a sophisticated measuring instrument capable of measuring a wide range of data inputs.

DIGITAL SCOPE DISPLAY - 2 channel inputs. Manual or continuous display. Timebase 500ms/div to 20us/div-accurate to 5%. 6 bit flash conversion gives 2 million samples/sec.

PLOTTER DISPLAY Timebase range 1 sec to 10hrs per plot.

ONLY £99.99

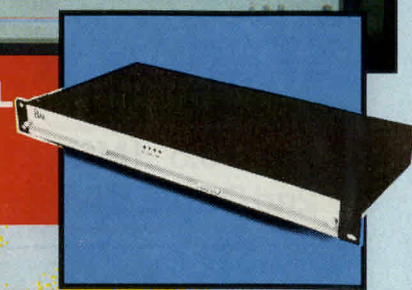
PLEASE STATE A500/1000/2000



8 CHANNEL DIGITAL MIXER

- ▼ Now an 8 channel digitally controlled mixer for under £100.00!!
- ▼ This system comes in two parts - a 19" rack mounting mixer - and a superb control program. Use your Amiga to give top quality 8 channel "digital" mixing.
- ▼ 8 inputs via 0.25" jack sockets. Two outputs via 0.25" sockets.
- ▼ Connects to Amiga parallel port.
- ▼ Control software gives 8 faders with super-fine increments, digital display of levels on each channel, stereo lock for each pair of faders.

ONLY £99.99 COMPLETE



- ▼ Master faders with bar graph display of output levels. Suitable for mono and stereo applications.
- ▼ When an ideal mix has been achieved, then the overall "mix" can be saved to disk for re-load as required - just like systems costing thousands !!
- ▼ Auto zero of faders.
- ▼ Top quality analogue and digital circuits give superb results.
- ▼ Complete hardware/software.

DATTEL ELECTRONICS

EXTERNAL 3.5" DISK DRIVE

- ▼ Slimline extra low profile unit.
- ▼ Top quality fully compatible drive mechanism.
- ▼ Throughport allows daisy-chaining other drives.
- ▼ A superbly styled case finished in Amiga colours.
- ▼ 1 meg unformatted capacity.
- ▼ Good length cable for positioning on your desk etc.

**NEW LOW
PRICE ONLY
£74.99
SINGLE DRIVE**

**ONLY £129.99 TWIN DRIVE
ADD £5 FOR COURIER DELIVERY IF REQUIRED**

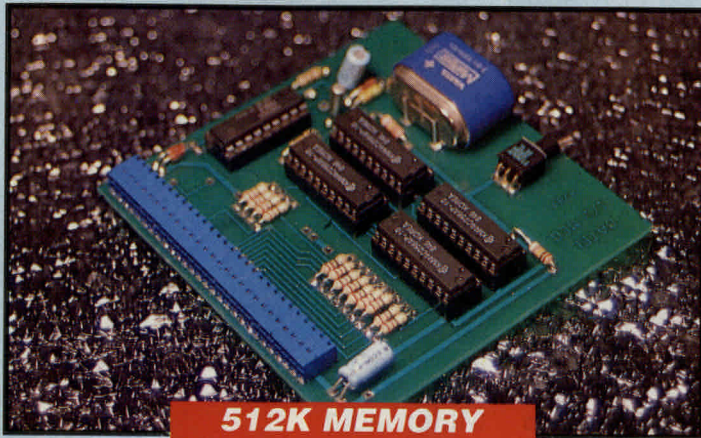
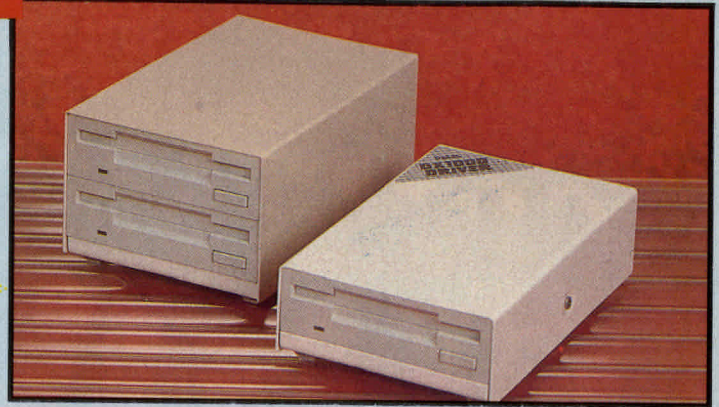
EXTERNAL DRIVE SWITCH

- ▼ Switch in/out of external drives.
- ▼ Save on memory allocated for drives not currently in use.

▼ DF1 & DF2 controlled.

▼ Fits between computer & driver(s).

ONLY £9.99



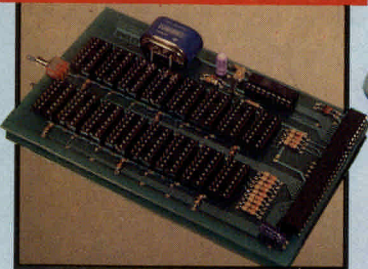
512K MEMORY EXPANSION

- ▼ Now with this superb 512K expansion unit you can simply plug in more memory. Bring your Amiga up to 1Meg Ram in seconds!!
- ▼ Featuring the latest 1 Meg fast Ram chips.
- ▼ Comes complete with dissable switch (not offered by some others, including A501 unit).
- ▼ Available with/without clock/calendar feature. Clock version has high capacity NiCad battery - never needs replacing.
- ▼ Low chip count means extra low consumption.
- ▼ High grade PCB with quality connector.
- ▼ Buy direct from the manufacturer and save!
- ▼ Simply plugs into internal Ram extension slot - no knowledge at all required.

ONLY £84.99 COMPLETE

ONLY £99.99 FOR VERSION WITH CLOCK/CALENDAR COMPLETE

512K RAM EXTENSION CARD



- ▼ If you can obtain your own Ram chips, we can supply the card.
- ▼ Accepts 16 x 41256 DRams.
- ▼ Available with/without clock/calendar option.
- ▼ Switch dissable feature.
- ▼ Simply plugs into Ram expansion slot.
- ▼ Fitted in only minutes - no user knowledge required.

ONLY £19.99

**ONLY £34.99 FOR
VERSION WITH CLOCK/CALENDAR**

NB. THESE PRICES DO NOT INCLUDE RAM CHIPS



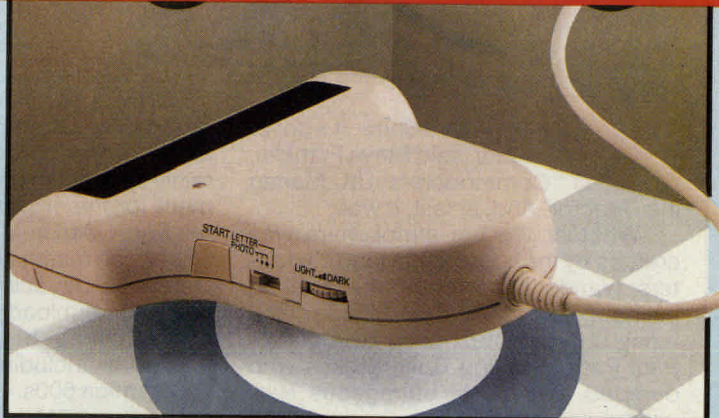
REPLACEMENT MOUSE

- ▼ High quality direct replacement for mouse on the Amiga.
- ▼ Teflon glides for smoother movement.
- ▼ Rubber coated ball for minimum slip.
- ▼ Optical system counting - 500/mm.

**SPECIAL OFFER - FREE
MOUSE MAT + MOUSE
HOUSE (WORTH £7.99).**

**ONLY £29.99
COMPLETE**

GENISCAN GS4500 AMIGA



- ▼ An easy to handle Handy Scanner featuring 105 mm scanning width & 400 dpi resolution enables you to reproduce graphics & text on your computer screen.
- ▼ Adjustable switches for brightness & contrast.
- ▼ A powerful partner for Desk Top Publishing.
- ▼ With Geniscan you have the ability to easily scan images, text & graphics into the AMIGA.
- ▼ Printout for Epson compatibles.
- ▼ Powerful software allows for cut & paste editing of images etc.
- ▼ Save images in suitable format for most leading packages including DELUXE PAINT etc.
- ▼ Package includes GS4500 scanner, Interface & Scan Edit software.
- ▼ Unmatched range of edit/capture facilities simply not offered by other scanners at this unbeatable price.

**SPECIAL OFFER
COMPLETE WITH PHOTON PAINT
FOR ONLY £169.99
INCLUDING HARDWARE/SOFTWARE**



ALL ORDERS NORMALLY DESPATCHED WITHIN 48 HRS

HOW TO ORDER ...

BY PHONE



0782 744707
24hr Credit
Card Line

BY POST



Send cheques/POs made
payable to
"Datel Electronics"

FAX

0782 744292

UK ORDERS POST FREE
EUROPE ADD £1
OVERSEAS ADD £3

PRICES AND SPECIFICATIONS CORRECT AT TIME OF PRESS
AND SUBJECT TO CHANGE WITHOUT NOTICE

CALLERS WELCOME - Please reserve goods by telephone prior to visit.

DATTEL ELECTRONICS

DATEL ELECTRONICS LTD., FENTON INDUSTRIAL ESTATE
GOVAN ROAD, FENTON, STOKE-ON-TRENT, ENGLAND.

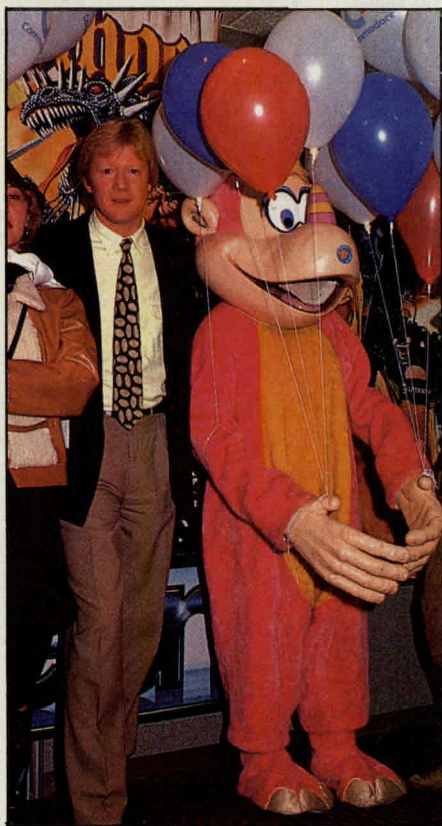
**SALES ONLY
0782 744707**

**TECHNICAL ONLY
0782 744324**

Commodore CHRISTMAS COMPUTER SHOW

"When we do a Show, it's got to be fun!" said Steve Franklin, Commodore's UK Managing Director. And, at last, it was.

Whether the fun atmosphere was created by the huge Disneyland characters wandering through the packed halls accosting delighted children or the fancy dress contest (won by Ocean's Paul Patterson and Colin Stokes who dumped their usual outrageous Nazi uniforms to bring on the clowns); or the hot music blaring from the back of the Commodore Stand or even the opening by top Capital Radio DJ David Jensen, there was a certainly a different feeling from recent "cheap as possible, even if it's nasty" Shows.



CBM's decision to take over the organising of the last Commodore Show of the decade themselves certainly seemed to have paid off in enjoyment for the crowds. Even the look of the Show was neater and classier than Shows of recent years, though there were, as usual, still many Stands simply devoted to unloading, piling it high and selling cheap bargain software and hardware, including almost down to £300 Amiga 500s.

While CBM mounted the show largely with its own resources and the help of experienced Showman Peter Bramald, last minute problems with the previous organisers meant that we were asked to create the Official Show Guide - a task that was familiar to us from past years.

For the visitors, long queues forming on Saturday and Sunday, it was a genuine Christmas Show with even a Santa's Grotto and a Santa Claus who denied he was the father of David Pleasance, CBM's Director of Retail Products, whom distributors and retailers throughout the country believe, we are told, really is Santa Claus and have photographic evidence to prove it.

Not all was in the "What's my present, Dad?" vein and there was through the three days a drive to raise money for the "Help a London Child" charity campaign. And there was a balloon race with the winner getting an Amiga 500.

All these lively events certainly added to the fun of the Show but there was also much more that made the journey through to traffic-jammed west London well worthwhile. CBM had been much more persuasive in convincing long-absent leading software companies to renew their relationship directly with the Commodore faithful. Top names such as Ocean, Electronic Arts, Mirrorsoft, Mindscape, Domark and Microdeal had substantial Stands at which their latest - in some cases previously unreleased - software was on display and sale. They were joined by the ever-loyal Anco and a face missing for some time from the Commodore world, erstwhile CCI columnist, Llama-soft's Jeff Minter.

But it was a Christmas Show, though a month ahead of time, so many of the visitors were there to buy gifts for themselves and others, and bargains abounded. There was even one Stand actually called Bargain Software.

Multimedia

C64 entertainment and even serious software was being offered at knock-down prices. You could pick up full-price games only a few months old down from £14.99 or £9.99 to £2 or £3, or, if you had programming in mind the classic 1st Publishing 64 Assembler for just £1 on the Multimedia Stand.

Multimedia? Not a name known to many yet in the computer field but likely to become well-recognised, though not for selling very cheap assemblers. Multimedia is a new distribution company formed by the leading lights of the recently-closed major Commodore and software distributor, Microdealer. Lee Ginty and Craig Saddington, Microdealer's previous directors, have separated themselves from the Maxwell

CBM Show

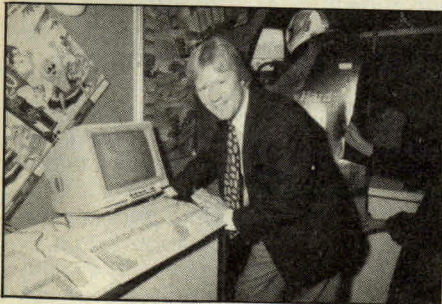
organisation and set up Multimedia and with their past record may well be challenging the UK's top entertainment software distributors, Centresoft and Leisuresoft, for a high place in the market. They launched their company at the Show just six weeks after putting their deal together.

There were many other more familiar names there too - and some rather unusual ones. Hamley's, the famous toyshop had a presence as did the Pepsi Challenge. And there was even Encyclopaedia Britannica trying to import a little education and culture to the shoot 'em up brigade.

Amiga Section

As usual, the Show was on two floors of the Novotel Hotel. A large part of the upper floor was dedicated to the Amiga. It was a quieter, obviously more serious section. Well, not always quieter... Emerging from a cavernous, strobe-lit annexe to Commodore's own Stand came the magnetic sounds of pop, rock and roll and all that jazz... Two or three intently-skilled musicians seemed to be concentrating on a mass of electronic equipment with world famous musical names like Roland emblazoned on it. The music was to top professional level and it was all, as could be seen amidst the masses boxes and cables, controlled by a single Amiga 500 and a CBM 590 hard drive.

Andrew Bishop, CCI's own electronic music buff, was often to be seen loitering nearby with a transfixed expression as if he had reached nirvana at last. (Or could that have been the result of hearing CCI's Billy Brown take a hand at the drums?). Music is beginning to play a leading role with the Amiga and Yamaha too brought some popular instruments to the Show, including keyboards as cheap as £69.00.



World First...

Bytes and Pieces, the well-known retailer, caused quite a sensation with their claimed "world first" 8 meg board that fits all Amigas and their brand-new, exciting AX-S expansion system.

Marcon had the Rendale Genlock that lets you record animation or graphics on a VCR. And graphics were also to the fore in the product with which Jeff Minter made his reappearance into the CBM field. His Trip-a-Tron light synthesiser gives spectacular iridescent

displays and has its own 120 command programming language. It was launched for the Amiga at the Show.

Bath Computer Shack had on offer a cordless mouse. Softstuff were providing a new range of educational software, as was MST Maverick Software. Frontier Software was previewing its new expandable printer buffer and Memory Expansions had (surprise, surprise!) upgrades in many forms for all Amiga memories.



Trilogic, always inventive, have come up with a mouse/joystick monitor sharer which lets one monitor or TV be used by two computer, or a computer and a VCR. Silica Shop, which declares itself to be the UK's No1 Amiga specialist retailer had a large and very well-stocked Stand.

Something For Everyone

If you had problems, you could recur to the expert help and advice of ICPUG for all Commodore machines. ICPUG is the largest and, they warmly tell us, "most friendly" computer club in the country. For Amiga only followers, there was also the UK Amiga Users Club and even the C16 got a mention with games from Software Selection and at just £1 from Anco.

There was, it seemed, as we try to achieve with CCI, something for everyone. Commodore themselves, now into their stride with big sales for the C64 ("We've shifted 150, 000 in 6 weeks!", one of the software houses that has a product bundled with CBM's 64 Light Fantastic pack told us wonderingly) and also with the Amiga. Their PCs are taking an ever stronger role in the market too. So Commodore had a right to look pleased with itself and are probably going to be able to fulfill Steve Franklin's promise at the recent PC Show of "taking the UK home market this Christmas!".

With software companies of renown like Ocean, Electronic Arts, Mirrorsoft and Mindscape adding a touch of up-market style, with the slashed prices of the "traders" in both hardware and software and even peripherals more than paying for the entrance (Pete Connor, Editor of our 16 Bit publication The Directory looked saddened at having paid a mere £2.99 for a mouse. Why, when he told us that they cost £9 at a recent Mac User Show? Because he

THRONGING CROWDS AT THE NOVATEL!

found another mouse mat later at just £1.99!); with Commodore putting on the show biz glitz with Santa Claus and Disney characters strolling the place, the Show reflected the revived optimism that is present in the Commodore world. For the last few years, the Com-



modore Show has looked a little bed-gaggled and down-at-heel. Times felt hard and the Show mirrored the feeling but now they may be a-changing. There is a far more confident air about Commodore and everyone involved with it and, as we all know, nothing succeeds like... well, an idea, or a computer company, whose time has come.

Z.M.S.



PIRACY.

THIS DISK COULD GIVE YOU 6 MONTHS IN PRISON

*Carrie Beecroft and Simon Power investigate
an increasingly common crime.*

Piracy is theft. It is stultifying and dishonest. Piracy is when unauthorised copies are made for retail sale and/or personal profit. Somebody is stealing something from its rightful owners just as if it were cash from a pocket.

The copying of originals, from audio tapes to Cartier watches, has troubled manufacturers since production began. Pirated copies complete with all the "special" and "original" features of the real thing are marketed with extreme ease and success because they are incredibly cheaper to make. Because the 'pirates' – the forgers, don't have the legitimate costs of the manufacturers of the original. This is the same whether it is done by big time or small time pirates, the professional with unused audio studio time or the schoolboy with a disk copier. The piracy situation becomes more complex in the world of computers. The owner or purchaser of an original piece of software is allowed by law to produce back-up copies for his personal use. However, it is illegal to use a copy of a program purchased for use on one kind of computer on another

computer. The situation worsens with the introduction of laptop computers. With Flach Cards and the conception of the two inch disk for portable computers, more and more people are going to find it necessary to copy software onto different media. Considering the present situation, in doing so they will be breaking the law.

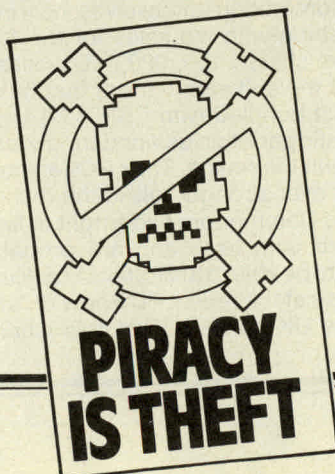
Thus, if this situation remains, with the law requiring consumers to repurchase a piece of software when the medium needs changing, a dilemma must be placed in the buyer's mind, whether he or she should spend the full

amount on an original copy, or to opt for the cheap pirated alternatives. In this age of the evolving computer, where new disk sizes and indeed new media are appearing at a frighteningly fast rate, the definition of piracy needs sorting out and a standardization made.

The problem lies mainly in the mystery surrounding the policy on software piracy, and the lack of legal control. MP Emma Nicholson is currently attempting to implement "The Hacker's Bill". "This should shed some light on the subject", Ms Nicholson informed us.

"We stand no more hope in winning the war against piracy unless the legal situation is clarified and the loose ends neatenened." Even people intimately involved in the computer industry show a startling ignorance of copyright ruling."

FACT: Bob Hay of F.A.S.T. (Federation Against Software Theft) informed us that the most urgent problem lies not with the law per se, but rather with the owners of copyrights. These owners have the final say as to what can or cannot be done with their product. As Bob Hay said: "If he so desires, the



copyright owner can insist that any person requiring to copy the article for either his own personal use or for the purpose of retail, must stand on his head waving his right leg while doing so. If this requirement is implemented correctly, the "pirate" copy is legal under the present copyright rules." This foolishly broad and loose legal arrangement only highlights the futility of the situation.

FACT: A number of companies have approached the problem from a different angle, that of implementing a "licence to use software" rather than allowing outright purchase of the program. The purchaser never 'owns' the software, though he does 'own' the disk or cassette. He is only licenced to use it - the title (ownership) of the software is retained by the company. All very well, but we can hardly envisage hordes of "Software Licence Inspectors", blue lights flashing and sirens wailing, kicking down doors to see if you have got a legal copy of their program or not!!!

FACT: If you own a game/animation package etc. on a 3½ inch disk, and produce a copy of this disk on a 2 inch flashcard for use on your laptop, you are a thief, and have committed a criminal offence.

FACT: Connectivity between computers is ever increasing. Information delivery via wires as opposed to via disk is becoming more common. Is there a solution? No-one has been able to give us a watertight legal opinion.

Until there is a clearer legal situation, piracy will continue at its present high rate. Emma Nicholson may be successful in implementing a bill which will define the situation.

'Designer' Software

One way of combating piracy may be to improve the status surrounding the original product. Just as it is desirable to own an original Sheraton chair, which displays, at least to experts, is craftsmanship as no reproduction can, why should it not be every consumer's dream to own original disks and NOT pirated copies? We could be encouraged to buy originals by improved marketing and packaging techniques. Owners of pirate copies should not be admired for being in possession of stolen goods, any more than the owner of a pair of cheap jeans is thought by those interested in clothes to be as stylish as the wearer of genuine 501s.

John Lettice, Editor of MicroScope, confronted the problem of different media when developing software for a new medium. The Xenith MiniSport



handheld computer operates on a 2 inch disk; when testing the machine during its development, it was essential to copy programs from other media as there was no software available of the required disk size. Technically, in doing this Lettice committed an act of piracy. He suggests that software houses should change their attitude to licences so that they cater for the ever increasing number of owners of two or even three PCs. The licence should be made per user rather than per program.

Games piracy, because games software is a mass market product, is probably more wide spread than that of any software. While software houses seek ever more secure protection systems,

MIDLAND COMPUTER REPAIR SERVICES

UNIT 1, THE OLD DAIRY, NORTH STREET, MELTON MOWBRAY, LEICS.
LE15 1NL. TEL: (0664) 410148 FAX: (0664) 410560

TECHADE

A RANGE OF DIAGNOSTIC/FAULT FINDING GUIDES FOR POPULAR HOME COMPUTERS IN COMPREHENSIVE MANUAL FORMAT.

- * NO TECHNICAL KNOWLEDGE REQUIRED TO USE THE MANUAL
- * NO COMPLICATED CIRCUIT DIAGRAMS USED OR REQUIRED
- * DESIGNED TO BE USED WITH INEXPENSIVE TOOLS
- * ELEMENT OF TEACHING COMPUTER SYSTEM/OPERATION
- * FREE EXPLANATORY LEAFLET AVAILABLE (S.A.E. PLEASE)

IMMEDIATE DESPATCH BY FIRST CLASS POST
MANUALS AVAILABLE NOW FOR C64 AND C64C

AT **£9.95** + 50p post/packing

AMIGA VERSION AVAILABLE LATE DEC 1989
AT £19.95 + 50p post/packing.

Cheques and postal orders only accepted.

REPAIRS

- * FULLY INCLUSIVE PRICES
- * 12 MONTHS WARRANTY

C64	£25.00
C64C	£28.00
C128	£30.00
C16	£20.00
C+4	£25.00
1541	£25.00

(LOGIC FLTS)

AMIGA £60.00

(LOGIC FLTS)

MONITORS & PRINTERS
(QUOTATION)

TRADE ENQUIRIES WELCOME
Cheques or postal orders only
accepted.

I.C.'s AND SPARES FOR COMMODORE COMPUTERS: S.A.E. FOR PRICE LIST

PIRACY ...

hackers often just regard them as challenges.

Some software houses are now refusing even to release games to magazines for fear of piracy. One games magazine was accused last year in being involved in allowing early copies to be made, which ended up being sold cheaply off market stalls.

Domark only permit games reviewers to go to their offices to examine their game before release and do not permit their removal. Dominic Wheatley, Domark's joint MD, says "getting a copy of a game *before* it's released is what really turns them on. We don't take any chances now."

It is estimated that for every audio cassette sold, two are copied. There exist no similar estimates for the software business. Copying is easy and profitable. Few professional copiers are caught though it is not unusual to find dealers casually making a copy of a piece of software to substitute for a

defective return. And at public schools, one boarder will buy and supply the boys in substantial quantities.

Thus the confusion continues. Until a clear licence agreement is standardised, that deals sensibly and fairly for those people with more than one machine, an adequate solution cannot be reached. Unless the concept of intellectual property is clarified and everyone, schoolchildren included, is successfully made aware of the damage copying does and the seriousness of the crime, piracy will not be eliminated. Unless, of course, we all return to hardware, like Nintendo and its cartridges...

C.B. and S.P.



“It's against the law to pirate software. You can be fined £2,000 or go to prison for six months.”

SOFTWARE EXPRESS

For
AMIGA and ATARI
(021) 643 9100



YOU KNOW . . .

that Software Express publish the highly successful
"Dungeon Master Editor",
for the Amiga and Atari ST.

YOU MAY NOT KNOW . . .

that we are also the **LARGEST** Amiga and Atari Specialist
in the Midlands and Southwest
dealing in PC's, Mega ST's, Amiga Desktop Publishing, Scanners,
Lazer, Digitizers, Calamus, Epson Emulators, Databases, Word
Processors, and not forgetting Games
Late Night Opening Thursday - 7pm

MIDLANDS

212-213 Broad Street,
BIRMINGHAM, B15 2JP

Tel: (021) 643 9100

For the best in
Service & Support,
visit our
Regional Branches

SOUTH

9 Exeter Street, (The Viaduct),
PLYMOUTH, Devon, PL4 9AQ

Tel: (0752) 265276

CALL US FOR YOUR BEST POSSIBLE PRICE

JEM
COMPUTERS

THE Star
COMPUTER PRINTERS

LC10 £135	LC24-10 £199	LC10 COLOUR £175
--------------	-----------------	------------------------

MANNESMANN TALLY LASER

MT905
£950

6 ppm, 5,000 pages per month
300,000 page engine life
Hewlett Packard Laserjet
Series II emulation

INCLUDES ON SITE MAINTENANCE

AMIGA 500

AMIGA 500

From £259

AMIGA 500 BAT PACK WITH DPAINT II,
BATMAN THE MOVIE, F18 INTERCEPTOR,
NEW ZEALAND STORY TV MOD. **£315**

A500 + TV MODULATOR + RETURN OF THE
JEDI - CUSTODIAN - MERCENARY -
WARLOCKS QUEST - ZYNAPPS - HELLBENT -
POWERPLAY - ELIMINATOR -
23 PUBLIC DOMAIN GAMES **£315**

PHILIPS 8833 MONITOR **£189**

COMMODORE 1081 MONITOR **£165**

COMMODORE 1084s MONITOR **£199**

RAM EXPANSION **£99**

SECOND DRIVE **£75**

ATARI ST

ATARI 1MB EXPLORER PACK **£220**

ATARI 1MB + SM 124 MONITOR **£320**

SUPER PACK 21 GAMES +
ORGANISER SOFTWARE
DATABASE SPREADSHEET WP **£290**

TEL · 0202 · 715989

and CALL IN TO OUR EXTENSIVE SHOWROOM IN POOLE, DORSET and
SHOWROOM OPEN MONDAYS TO SATURDAYS 9.30 to 6pm

**WE STOCK A FULL RANGE
OF AMIGA SOFTWARE**

COMMODORE PCs

	MONO	COLOUR	EGA
PC10SD	£499	£599	£749
PC10DD	£589	£739	£875
PC20HD.	£779	£959	£1,089
PC40SD	£1,065	-	£1,270
PC40HD	£1,393	-	£1,587

**COMMODORE B2000
XT BRIDGE BOARD**

+ PHILLIPS 8833
+ 29MB HARD DISK **£1,249**

SOFTWARE

Full software list inc:
LOTUS Wordstar Ventura
ASHTON TATE WordPerfect Ability
DIGITAL (GEM) SAGE Clipper
Multimate MICROSOFT
Smart Supercalc

PRINTERS

9 PIN

MY81	£110.00	EPSON LX800	£150.00
CIT1200	£120.00	KXP1081	£120.00
STARLC10	£135.00	CIT180E	£145.00
SEIKOSHA 1-80A	£115.00	STARLC10(COL)	£195.00

24 PIN

SEIKOSHA SL80A	£235.00	STARLC24-10	£255.00
NEC P2200	£255.00	EPSON LQ500	£255.00
KXP1124	£255.00	AMSTRAD LQ3500	£175.00

LASER

BROTHER HL8	£1,400.00	CANON LP08	£1,275.00
STAR LASER8	£1,230.00	KXP 4450	£1,350.00
HERMES 800	£1,099.00	HPLASERJET II	£1,270.00
MY905	£950.00		

INK JET

CANON BJ130 INK JET PRINTER **£575.00**

All accessories low low prices

All Epson Printers	20% discount
All Brother Printers	20% Discount
All NEC Printers	25% Discount
All Toshiba Printers/Lasers	POA
HP/Roland/Calcomp Plotters Minimum	20% Discount
All Hewlett Packard Lasers	25% Discount
All Amstrad Printers	POA

**ALL PRICES EXCLUDE VAT
COURIER DELIVERY £5**

406 ASHLEY ROAD, PARKSTONE, POOLE, DORSET
TELEX 41445 JEME G

DATTEL ELECTRONICS

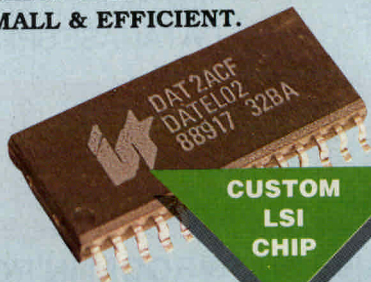
**UNBEATABLE
VALUE**



**THE ANSWER TO
YOUR DISK
DUPLICATION
PROBLEMS**

ON BOARD CUSTOM LSI CHIP
MAKES THIS UNIT EXTREMELY
SMALL & EFFICIENT.

WARNING 1988 COPYRIGHT ACT **WARNING**
Datel Electronics neither condones or authorises the use
of it's products for the reproduction of copyright
material.
The back-up facilities of this product are designed to
reproduce only software such as public domain material,
the users own programs or software where permission to
make a back-up has been clearly given.
It is illegal to make copies, even for your own use, of
copyright material, without the permission of the
copyright owner, or their licence.



**CUSTOM
LSI
CHIP**

SYNCR0 EXPRESS

▼ **SYNCR0 EXPRESS IS A HIGH SPEED
DISK DUPLICATION SYSTEM THAT WILL
PRODUCE COPIES OF YOUR DISK IN
AROUND 30 SECONDS!!**

- ▼ Syncro Express requires a second drive & works by controlling it as a slave device & ignoring the AMIGA disk drive controller chip, high speeds & great data accuracy are achieved.
- ▼ Menu driven selection for Start Track/End Track - up to 80 tracks. 1 side, 2 sides.
- ▼ Very simple to use, requires no user knowledge.
- ▼ Also duplicates other formats such as IBM, MAC etc.
- ▼ Ideal for clubs, user groups or just for your own disks.
- ▼ No more waiting around for your disks to copy.
- ▼ Probably the only duplication system you will ever need!

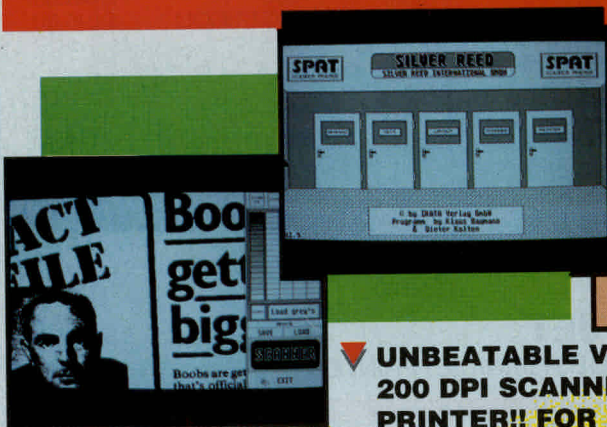
ONLY £34.99

COMPLETE HARDWARE/SOFTWARE

**If you don't have a second drive we can
supply SYNCR0 EXPRESS
together with a drive for
ONLY £104.99.**

**SP 11 SCANNER/
PRINTER ONLY
£449.99 INC. VAT + PP**

**UNBEATABLE
VALUE**



▼ **UNBEATABLE VALUE - A FLATBED
200 DPI SCANNER PLUS BUILT-IN
PRINTER!! FOR LESS THAN £450!!**

**Δ TRUE 200 DPI
FLATBED SCANNER/
PRINTER**

- ▼ Comes complete with superb software to scan/edit pictures.
- ▼ Very comprehensive software allows for Capture, Writing, Cut/Paste, Printing, Load & Save of images.
- ▼ Save to your favourite graphics/DTP package - very easy to use.
- ▼ Easy to install - connects to the Printer Port - ready to scan in minutes.
- ▼ Up to 16 grey scales or black & white modes - giving you superb scanned images.
- ▼ Complete - no more to buy.

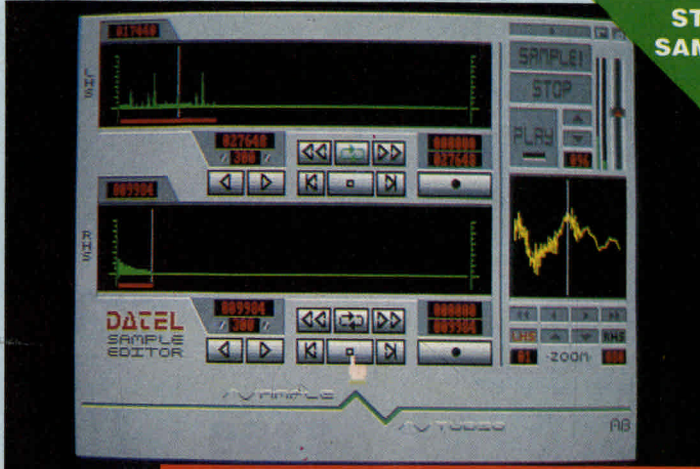
BUT THAT'S NOT ALL...

- ▼ Not only does the SP11 scan at 200 Dpi - it is also a superb image printer giving high definition output prints of scanned images, screen dumps etc.
- ▼ PLUS - its a Photocopier!! Yes, just press start and it will deliver a superb photocopy of your original in seconds!

TOO GOOD TO BE TRUE? WHY NOT BUY ONE AND SEE - YOU WON'T BE DISAPPOINTED!

DATTEL ELECTRONICS

STEREO SAMPLING



AMIGA PRO SAMPLER STUDIO + DATTEL JAMMER

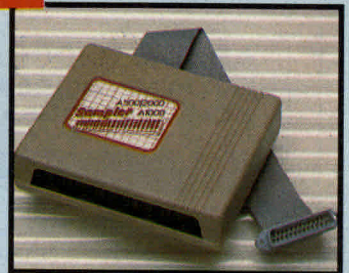
- ▼ A top quality stereo sampling system at a realistic price.
- ▼ 100% machine code software for realtime functions.
- ▼ HiRes sample editing.
- ▼ Realtime frequency display.
- ▼ Realtime level meters.
- ▼ Files saved in IFF format.
- ▼ Adjustable manual/automatic record trig level.

- ▼ Variable sample rate & playback speed.
- ▼ Separate scroll line waveform windows & zoom function with Edit windows for fine accurate editing.
- ▼ 3D shot of sound waveform. Wave editor to design your own waveforms or adjust existing ones.
- ▼ Microphone & line input 1/4" Jack & Din connections.
- ▼ Software files can be used within other music utilities.

TO COMPLEMENT THE SAMPLE STUDIO THE DATTEL JAMMER GIVES YOU A 5 OCTAVE KEYBOARD TO PLAY & RECORD YOUR SAMPLED SOUNDS

FEATURES:-

- 4 track sequencer up to 9999 events.
- Tempo & Beat controls.
- Mixer Controls on Instruments.
- Load & Save sequence.
- Works on standard IFF file sounds.



ONLY £79.99 PLEASE STATE A500/1000/2000

MIDIMASTER



- ▼ Full Midi Interface for A500/1000/2000 (please state model).
- ▼ Compatible with most leading Midi packages (including D/Music).
- ▼ Midi In - Midi Out x3 - Midi Thru.
- ▼ Fully Opto isolated.

ONLY £34.99

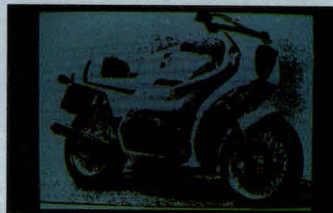
MICRO MIDI



- ▼ A simple low price MIDI Interface for the A500.
- ▼ All the features found on more expensive units. Fully compatible.
- ▼ MIDI In - MIDI Out - MIDI Thru.
- ▼ Fully Opto isolated.

ONLY £24.99

VIDEO DIGITISER



- ▼ 256 x 256 display with 16 grey levels.
- ▼ Realtime frame grab 1/50th second.
- ▼ Takes standard composite Video input from camera or Video recorder.
- ▼ Screen update 1 frame per second, single, continuous or buffered display.
- ▼ Load, Save facilities including IFF Save.
- ▼ Edit picture, cut, copy, paste and undo.
- ▼ Special effects, reverse, negative, mirror, compress, etc.
- ▼ Increase the width of the display to 320 x 256 automatically or manually.
- ▼ Plugs into the parallel port of your Amiga 1000/500/2000.
- ▼ Comes complete with its own power pack.

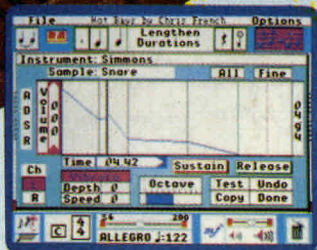
ONLY £89.99

A TOTAL MIDI MUSIC PACKAGE

SAVE OVER
£75*

* R.R.P. over £175

UNBEATABLE VALUE PACK - THE YAMAHA SHS 10 FM MIDI COMPATIBLE GUITAR-STYLE SYNTHESISER, THE ACTIVISION MUSIC STUDIO SOFTWARE PLUS THE MICROMIDI INTERFACE TO CONNECT TO YOUR COMPUTER SYSTEM



- ### YAMAHA SHS 10 FM SYNTHESISER KEYBOARD
- ▼ Superbly styled guitar-type keyboard with shoulder strap.
 - ▼ Top quality brandname.
 - ▼ 2.5 octave keyboard.
 - ▼ 25 built-in instrument and rhythm choices.
 - ▼ Uses FM synthesis.
 - ▼ Full MIDI OUT standard.

FREE MIDI CABLES

ACTIVISION MUSIC STUDIO

- ▼ A full feature MIDI Recording Studio.
- ▼ A multi channel sequencer with realtime input and full editing facilities.
- ▼ Completely menu driven - full Mouse control.
- ▼ Very simple to use.

MICRO MIDI INTERFACE

- ▼ This unit connects your computer to any MIDI instrument.
- ▼ Fully Opto isolated - MIDI IN, MIDI OUT, MIDI THRU.
- ▼ Just plug in and go.

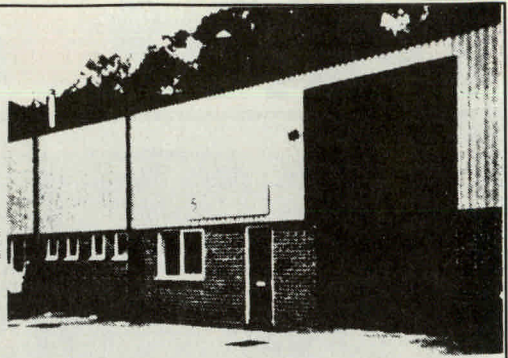
FREE CABLES

- ▼ 3 metre long MIDI Cables - completely FREE!! (normally £6.99).

**FOR ONLY
£99.99
NO MORE TO BUY!!**

COMPOST

THE SOUTH'S LEADING COMPUTER BY POST SERVICE



CREDIT CARD MAIL ORDER



AMIGA A500 + BATMAN 2

BATMAN THE MOVIE
NEW ZEALAND STORY
F18 INTERCEPTOR
Buggy Boy
Ikari Warriors
Barbarian
Thundercats
Terrorpods
Mercenary
Insanity Fight

Give away!

Art of Chess
Wizball
Amegas
Deluxe Paint II - Mega Paint Package
Microblaster Autofire Autoswitched
Joystick
10 x Blank 3.5" Disks
Mouse Mat

£345

AMIGA A500

INCLUDING:-

- MOUSE • WORKBENCH
- UTILITIES • MANUALS
- BASIC • TUTORIAL

£269

AMIGA B2000

INCLUDING:- MOUSE • WORKBENCH
• BASIC • UTILITIES • MANUALS

£799

AMIGA A500/ 1084(S) MONITOR

£469

AMIGA BATMAN PACK

INCLUDING BATMAN COVER

£320

PRINTERS

Citizen 120D	£108	CP2200	£254
Citizen 180E	£126	NECP8+	£419
Citizen MSP15E	£189	NECP7+	£538
Citizen HQP40	£289	Panasonic KXP1081	£126
Citizen HQP45	£299	Panasonic KXP1180	£156
Epson LX400	£142	Panasonic KXP1124	£256
Epson LX850	£189	Star LC10	£129
Epson FX1050	£379	Star NX15	£289
Epson LQ400	£205	Star LC2410	£257
Epson LQ550	£272	Star XB2410	£418
Epson LQ850	£404	Star XB2415	£545
Epson LQ1050	£549	NECP7+ Colour	£823
Epson LQ2550	£847	Star LC10	£184
Epson DFX5000	£1078	Xerox 4020	£949
HP Deskjet	£449*		
HP Deskjet +	£544*		

THE **Star** COMPUTER PRINTERS

LC10 £129

LC24-10 £199

LC10 COLOUR £169

COLOUR PRINTERS

Citizen HQP40	£349
Citizen MSP50	£350
Citizen MSP55	£400
Hewlett Packard Paint Jet	£589*
NECP8+	£504

LASER PRINTERS

Brother HL-8e	£1409*
Epson GQ5000	
Hewlett Packard Laser Jet II	
Star LPB	£1248*

* Inc. 1 yr. on site maintenance

ACCESSORIES

AMIGA EXTERNAL DRIVES

AF880 3½ DRIVE	£89 inc
RF302C 3½ DRIVE	£85 inc
CUMANA CAX 354E	£99 inc
A1010 3½ DRIVE	£99 inc
No MD C30 3½ DRIVE	£85 inc

A2000 ACCESSORIES

20MB hard disk	£399 inc
AMIGA or MSDOS XT Bridge board	£399 + VAT
AT Bridge board	£675 + VAT
INT Genlock	£179 + VAT
5 MB RAM/B with 2 MB RAM 2nd Drive 3½	£75 + VAT

DRIVES

Triangle 20MB Hard disk	£459 + VAT
VORTEX A500 Hard disk 40MB	£510 inc
Triangle 40MB Hard disk	£579 + VAT
Cumana CSA 394	£89 inc
Cumana CDA 358	£199 + VAT

NEC 2nd Drive £64

New A600 20MB A590HQ	£380 inc
----------------------	----------

MONITORS

CBM 1084S Stereo	£239 inc
CBM 1901	£149 inc
PHILIPS CM8852	£260 inc
CBM CGA Compatible Philips 6833	£229 inc
CBM 1900 Mono	£129 inc
ATARI 124 Mono	£129 inc
ATARI SC/1224	£259 inc

AMIGA ACCESSORIES

A501-512 KRAM	£129 inc
MOUSE MAT	£4.95 inc
AMIGA DUST COVER	£4.95 inc
TV MODULATOR	£21.95 inc
STEEL MONITOR	£15.95 inc
STANDARD AMIGA 5205T	
STEEL DOUBLE MONITOR STAND AMIGA ST	£25.95 inc

COMMODORE C64

C64 Hollywood Pack	£148 inc
C64 Home Entertainment Pack	£199 inc
1541 C11 51/4 C54	£145 inc

CHRISTMAS SALE

**F501 512K
RAM EXPANSION
£63**



*"Cor!
These prices
be well Batty!"*

0202 292195

OPEN MON-SAT 10-5.30

ALL PRICES EXCLUDE VAT

Mail Order Hot Line Phone 0202 292195

DELIVERY UK MAINLAND

SAME DAY DELIVERY
CALL FOR DETAILS
CONSUMABLES £2 + VAT
HARDWARE 4 WORKING DAYS
£5 + VAT
NEXT WORKING DAY
£10 + VAT

6 FOREST CLOSE
EBBLAKE IND ESTATES
VERWOOD
DORSET

UNIT 6, FOREST CLOSE, EBBLAKE IND ESTATE, VERWOOD, DOREST BH21 6DA

OPEN MONDAY-SATURDAY AM-5.30PM

More 64 Power Making Money

Andy Moss in his Adventure column raves over a new game. Peter Gerrard lets CCI readers in on its creation and points to the profitable moral of the story

So you want to make money out of your Commodore 64, do you? Here's one way. Many of you must sit at home in front of the 64 playing adventure games into the early hours of the morning, lost in a wondrous world of fantasy that is usually far removed from the confines of everyday life as we know it. But have you ever wondered how the game that you are playing came into being? What is the story behind the game's origination, development, and eventual release? By taking just one example we can show how you too might just manage to recoup a little of the money that you originally spent on your 64 and peripherals.

A few adventure games of mine have been published in the past. Nothing of any great earth-shattering importance, but at least I know how to put a game together (I hope!). Strong story line, a host of characters, and a collection of intriguing puzzles that would hopefully have various heads being scratched as people tried to complete the game, are just some of the main ingredients. However, with the developments in computer technology that are going on it seemed to me that the individual was going to be hard pushed to write an interesting and hopefully innovative adventure that would make extensive use of the features of the computer. Such things were the realm of companies and

corporations now, people like Magnetic Scrolls, Level 9, Infocom, and other masters of the genre.

That same thought, that at least two heads were better than one when it came to writing a good adventure, had also occurred to a friend of mine. Sandra Sharkey for a long time was editor of the popular fanzine *Adventure Probe*. Another person who should, therefore, be capable of knowing what constitutes a worthwhile game. So we got together in the hope of, if not writing an adventure, at least coming up with the storyline for one.

Our first attempt ended in failure. For a while I had been writing short stories for the aforementioned *Adventure Probe*, those stories concerning themselves with an inept wizard, a fearsome dwarf, and a talking rabbit who could also read minds. You have met them in CCI! From these stories grew the plot of a game that saw them travelling back in time (although in the game they go forward first of all, owing to the wizard getting confused over a few of the runes on the time travel spell scroll) to the land of Camelot. There King Arthur was as yet but a young lad; Merlin was in the grip of an evil power, and as our merry band of three you had to sort everything out and ensure that Merlin joined Arthur's side and Arthur ended up as king of all England. As a sub-plot, there is the local

megalomaniac baron who wants to take charge of everything and who generally hinders and obstructs you.

There was a little bit more to it than that, but we did have one idea that, we thought, would make the adventure stand out from the crowd. It would also make it very difficult to solve. You could play any one of the three characters of wizard, dwarf or rabbit. You could swap from one to the other whilst playing the game, and various problems would depend on you being the right character at the right time. The wizard, being tall, could see what was on top of a high shelf, for instance, whereas the dwarf or the rabbit could not. He can also cast spells (with varying degrees of success), which is something that the other two cannot do. On the other hand the dwarf, being strong, would be able to move objects that wizard and rabbit could merely lean against. As a final example, the rabbit's ability to read minds would help him in situations that would leave the wizard and the dwarf floundering. Intricate problems can be devised within such a framework.

That is not to say that you could not have more traditional adventure-type problems as well, ones that could be solved by any of the party, but we thought it would make an interesting change to be able to play a game from three totally different points of view.

When we had got the storyline

continued on page 38

Hints and Tips

continued from page 37

worked out we moved onto the map and its associated location descriptions, together with the various problems and their solutions. All this was meticulously typed up, along with a list of objects (and their starting locations and uses) and anything else that we could think of, like character profiles for the main protagonists, and the end result was a large collection of material that, we thought, would make life much easier for the eventual programmers. We had long since decided that this game was beyond both our skills in the programming department, and a company would have to be convinced into taking it on.

We tried Level 9 first, and about a week later heard that for some time they had been planning on doing a game called Lancelot, which of course is all about Arthur and Camelot! Curses, and the eventual rejection of the game came as no great surprise. Sad, but not surprising, and even though we did get a very nice letter it was still a rejection. They did say that they would be interested in anything else that we might come up with, a point we were to bear in mind.

Nothing daunted, we sent it off to Magnetic Scrolls, who also turned it down in due course. Another nice letter back, but many month's work was clearly destined not to produce any results.

During the course of working on getting this game up to a presentable degree, other ideas had occurred. One such was just that, an idea, and I spent about fifteen minutes doing a rough outline of it. That outline went like this:

You are Sebastian Mellford, frightfully, frightfully rich, an expert on the stock market and the most upwardly mobile of all Yuppies. You even clean your teeth using a vintage Chablis. You own a Lamborghini, complete with its own telephone, modem, link to the markets around the world, lap-top computer, cocktail cabinet, pocket television, compact disc player, everything. You have a suitable des-res in commuter country, situated next to the cemetery, which gives it just the right amount of down-market kudos to make it eminently desirable and vastly over-priced. You cruise into work every weekday at around ten, makes one or two perfectly correct estimates of the market, sell and buy a few shares and increase your personal fortune into the bargain, take a long and expensive lunch in a little place that you know, put your feet up for the afternoon, then drive home. Your evenings are spent in suitable nightclubs, your weekends in the play palaces of millionaires, you are seen in all the right places, and you look set for a superbly contented life.

What a shame it is, then, when your

body is dragged from the wreckage of your car one Sunday evening ...

You are very, very, dead.

You are Seb the ghost, a beginner at the art, a most humbled spirit, not very experienced in shrieking and frightened by your own wails. Clanking is beyond you, you are scared of the cemetery, and you like to keep out of the way of other, more experienced, ghosts. If only you could be reincarnated ...

Let play begin!

And then we outlined a few basic rules about being a ghost. Fortunately this is not from personal experience, I do admit to a little bit of guesswork here.

There are ten levels of consciousness, ranging from the zero level of the beginner ghost that you are now, up to the ninth level. This is humanity, your ultimate goal. In between are all kinds of creations, and it is up to you to discover what they are. As you learn how to reincarnate yourself further up the scale you can reappear on earth at various levels of consciousness: again, it is up to you to discover the meaning of those levels.

As your experience grows, so do your powers as a ghost. You might succeed in becoming the most terrifying of spectres, but then again you might remain as the sort of thing that would be hard pushed to frighten a hamster.

When you have attained the first level, you will be able to switch from that back down to the zero level, and up again to the first. On reaching the second level, you will be able to use any of levels zero, one, or two, depending on the situation. So it will proceed. If you ever reach the giddy heights of the eight level, just one step from humanity, you will be capable of adjusting yourself to any of the previous levels. It's all a matter of learning, really.

Just keep one thing in mind at all times. The cemetery is full of beings that have been dead for a much longer period of time than you, so try not to over-reach yourself. Not even a ghost has nine lives...

Many months pouring over wizards, dwarfs and talking rabbits was, over many weeks, rejected. A few minutes messing about with a ghost was accepted in a few days! Level 9, our old friends who had told us to keep in touch, decided that they liked the idea and could we carry on working with it? Of course we could, and set to straight away.

However, we hit the not inconsiderable snag of Sandra having to go into hospital. I did not feel like producing the entire thing myself, and there matters might have rested had not Pete Austin of Level 9 decided that he would take the concept and produce

the rest of the game from there. His letter of acceptance said "I found myself in the awkward position of wanting to produce a game with a ghost as a hero, but with the redesign of "...Bump..." (our working title was Things That Go Bump In The Night) indefinitely postponed and the danger of being misunderstood if I designed a game myself on a similar subject. I'm glad we could agree on a price for me to use the subject". The letter said several other things as well, one of which was a proposed name change to "Spook".

A little later the game saw another name change when it settled on its eventual release name of Scapeghost. The game, as produced by Level 9, is quite different from our original idea, but still follows the two basic points of our concept: 1) you are a ghost who is a bit concerned about his manner of dying, and 2) you can only gradually progress up to being a competent spirit.

Level 9 now have you investigating a drug smuggling ring that you were looking into when you met your untimely demise, and a superb job they have made of it. The hero's name has become Alan Chance (*ghost of a chance, ho ho ho*), and they've added many humorous touches and indeed characters. My favourite character is the ghost of an old landlord known as Joe Danby, who has the initial job of introducing you to the rest of the residents of the graveyard, a job he carries out with consummate ease and splendid wit. Graveyard humour, as Joe refers to it, and very funny it is too. We wanted to introduce a punk ghost, and although they have not included it, one of the ghosts is fairly close to it. A nasty, aggressive sort of ghost who definitely doesn't like you. He takes a lot of convincing before he will lend you a ghostly hand.

We have both seen a pre-production version of the game, mainly so that we could help to eliminate any small buglets that might remain, and thoroughly enjoyed playing it. To be fair to the game, I don't think we would have solved it without the generous help of Level 9 themselves.

So if you are happily playing away at an adventure game, and suddenly get an idea for one of your own, don't just dismiss it because you have not got the necessary programming techniques. Jot it down, check that it has not been done before by anyone else, and who knows? You might slave over the idea for months and see it rejected, as we did, or more in hope than anything else you might dash off a few quick words and see the concept taken up, as we also did.

Now, if anyone wants an adventure about a wizard, a dwarf, and a rabbit...!

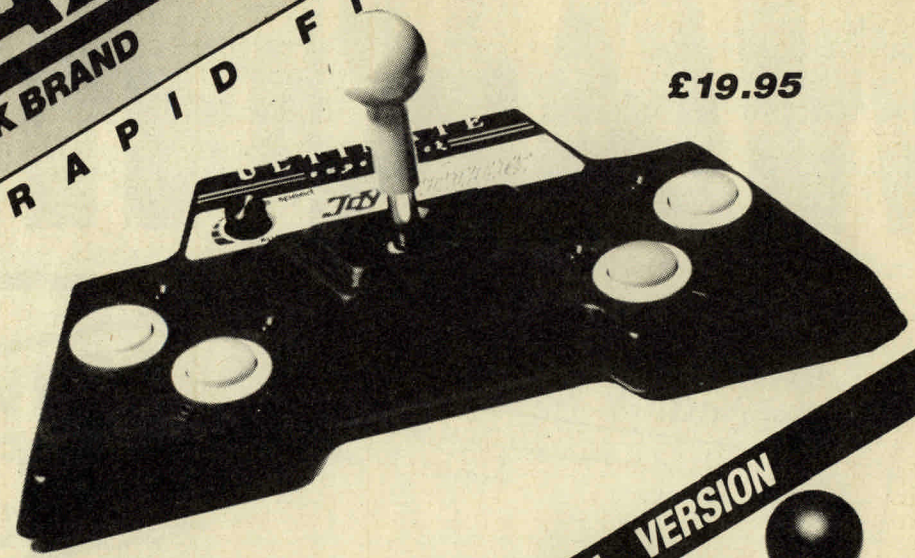
P.G.

EUROMAX

THE LEADING JOYSTICK BRAND

U L T I M A T E R A P I D F I R E

£19.95

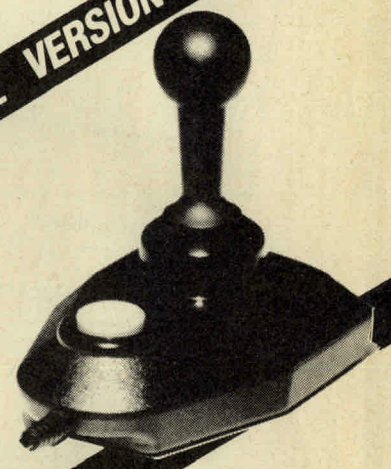


for the Dedicated Games Player

- * Dial a Speed Rapidfire
- * Short travel positive stick
- * Fire Button LED's
- * Large stylish base for total stability
- * Sucker feet

A L S O A V A I L A B L E I N F R A R E D R E M O T E C O N T R O L V E R S I O N

£15.95



A R C A D E

the joystick for all games

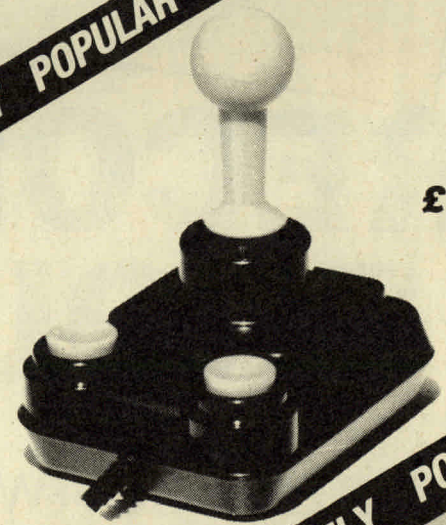
- * Totally reliable – over 500,000 sold worldwide
- * Positive action
- * Left or Right Hand Control
- * Tapered shaft for maximum comfort

R E T U R N E D T O R A N G E B Y P O P U L A R R E Q U E S T

P R O F E S S I O N A L 9 0 0 0

£14.95

- * The 'Original' Joystick
- * Full 8 directional, sensitive control
- * Dual 'Super Fast' fire buttons
- * Ergonomically designed handle
- * Robust construction



PROFESSIONAL 9000 DELUXE
WITH TOP FIRE BUTTON AND DIAL A
SPEED RAPID FIRE ALSO AVAILABLE

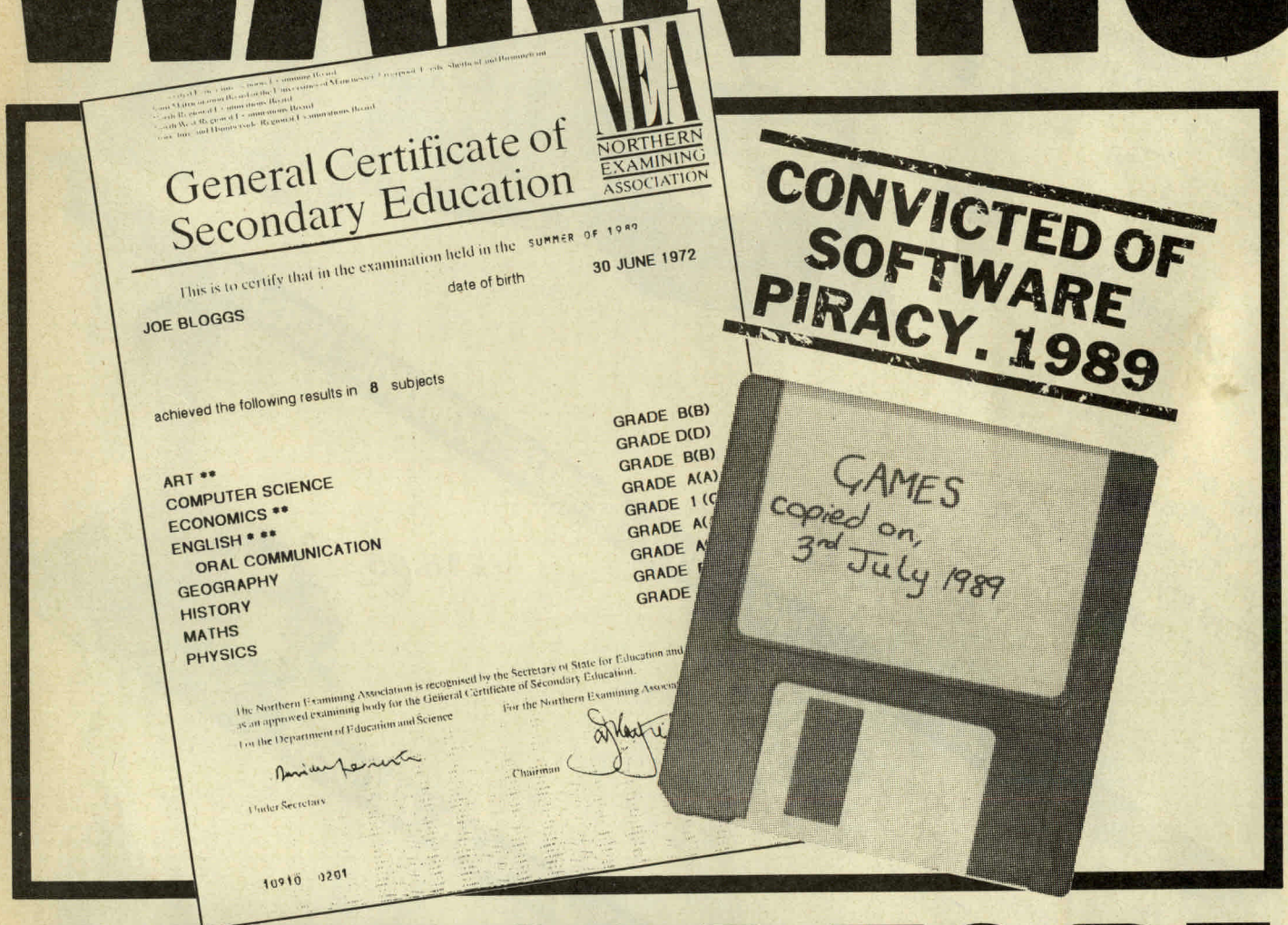
TOUGH, RELIABLE AND

EXTREMELY POPULAR

**For these and other Euromax Joysticks
contact your nearest computer stockists.**

BESSINGBY INDUSTRIAL ESTATE, BRIDLINGTON
NORTH HUMBERSIDE, YO16 4SJ, ENGLAND.
TELEPHONE: 0262 601006/602541
FAX No: 0262 400068

WARNING

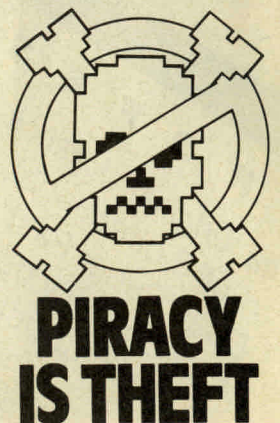


A RECORD TO BE PROUD OF?

If you pirate software you are a thief. Thieves will be prosecuted

THIS CAMPAIGN IS ORGANISED BY
ELSPA
EUROPEAN LEISURE SOFTWARE
PUBLISHERS ASSOCIATION

Any information on piracy should be passed to
The Federation Against Software Theft.
Telephone 01-240 6756



Battle Chess

Electronic Arts

When I was given the ware that this review about, my first thought was "I've already done that!". The software in question being "Battlechess", the now famous, fully animated, 3D chess game from Interplay (through Electronic Arts). On looking again though, I noticed that this version was not for the Amiga but for the C64.

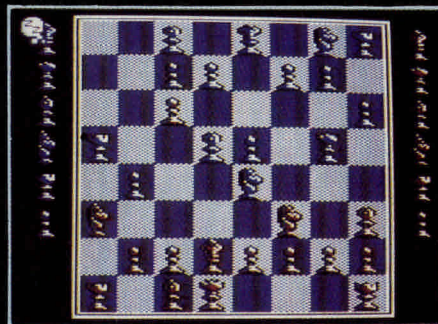
Those of you who have seen Battlechess on the Amiga will understand my immediate feelings of scepticism. How could a program that uses all 512K of an A500 be crammed into a meagre 64K of memory? The simple answer is that it can't but, by using the abilities of the C64 to the fullest, Interplay have come up with a very laudable conversion.

As with it's big brother, protection is provided by the need to enter a move from one of twenty notated games, listed in the Manual. There is no other disk protection, in fact the initial screen allows you to enter a Copier Utility that will make a backup copy for you. A nice touch here is that when you play from the copy, the program skips this part and takes you straight into the game. Having entered the correct move (you get three tries), you are prompted to turn the disk over and the loading be completed.

The screen is initially presented in 3D, with very passable representations of the pieces seen in the Amiga version. The King is still an old man with his glamorous (younger) Queen, the Rooks are ramparted castles and the Pawns, men-at-arms. Piece movement is

available from either the keyboard or joystick, with a number of "keyboard shortcuts" also provided. Moving the cursor off of the top of the board activates a series of four drop-down menus: Disk, Move, Settings and Level. The Disk menu allows you to load or save a game, start a new game, set the board up (by individually placing pieces on it) and quit back to basic. The Levels menu lets you choose from Novice (easiest) to Level 6 (hardest). At each higher level the computer will "look" further ahead into the game, thus playing a better game of chess. The other menus are the two that will probably be used most often.

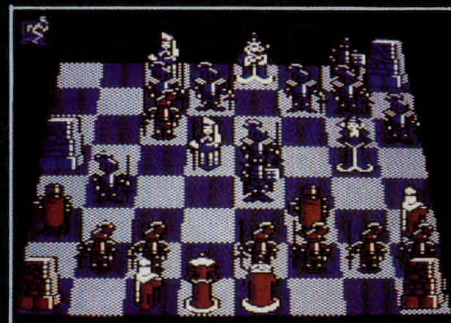
"Move" contains the following options: Force, Take Back, Replay and Suggest. At higher levels, Battlechess will spend longer "thinking" about it's next move. "Force" will interrupt the process and make the program take the best move that it has thought of so far.



"Take Back" will allow you to cancel your last move (handy if you make a mistake), and "Replay" will restore it (should you decide it wasn't such a bad move after all!). If you are stuck and unsure how to make your next move, then "Suggest" will do just that, give you a

Interplay

hint on what to do. "Settings" not only contains the "usual" 2D/3D, Sound On/Off and who-plays-what options but also two that are not so usual.



Within the obvious limitations of the machine, Interplay have done quite a remarkable job and achieved the seemingly impossible; 2 megabytes of animation have been packed onto two sides of a five and a quarter inch disk!! The pieces are clearly recognisable and the animations are as clever (and sometimes amusing), as those found on other versions.

If you've been thinking about a Chess game for your 64, or are stuck on what to buy a 64 owner for Christmas, I recommend that you take a good look at Battlechess, it could be just what you are looking for.

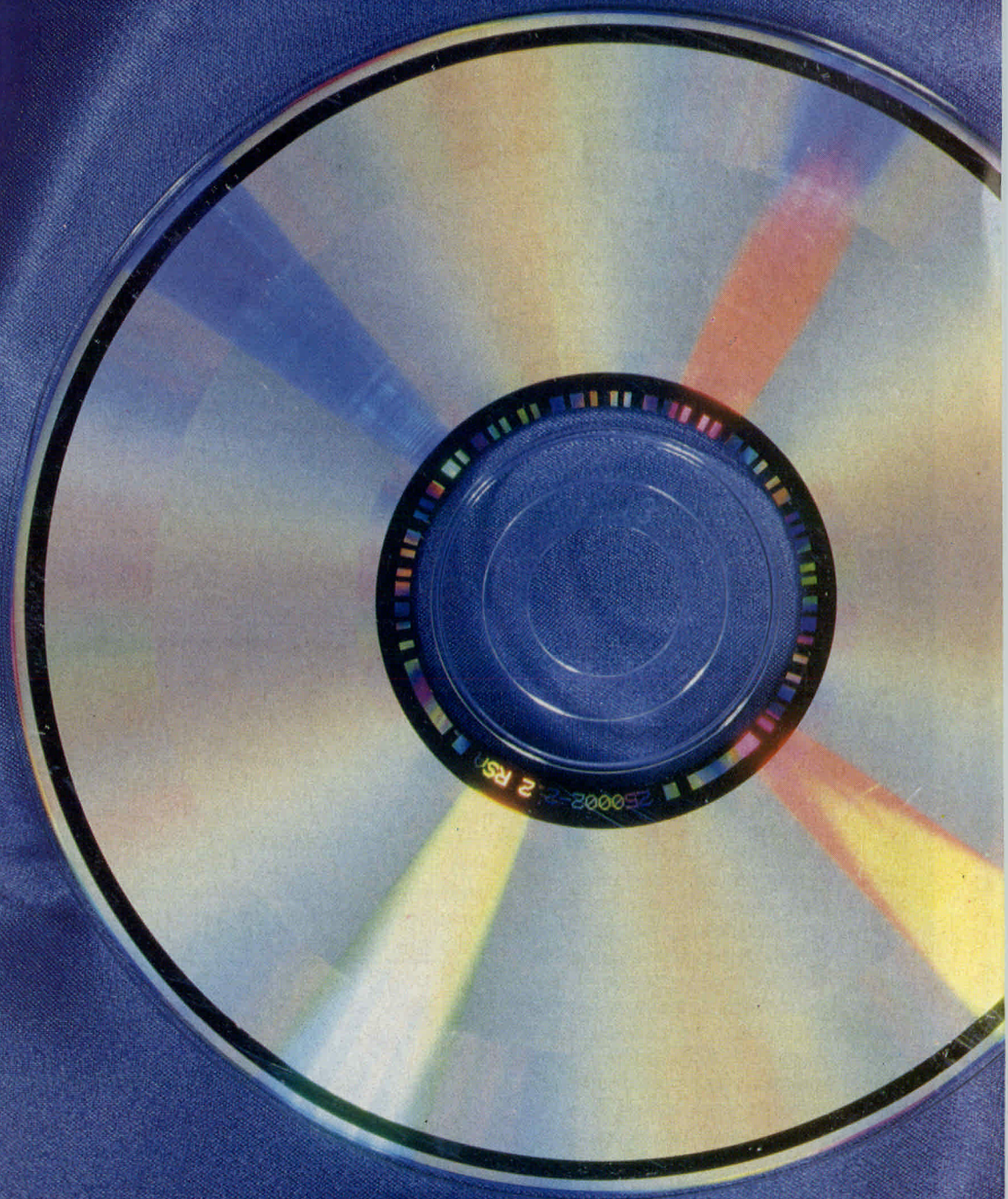
N.S.

Ratings:
 Graphics: 85%
 Sound: 70%
 Playability: 80%
 Overall: 75%

THE CD GAMES PACK

1. BMX SIMULATOR
2. SUPER STUNTMAN
3. FRUIT MACHINE
4. PRO SNOOKER
5. SUPER ROBIN HOOD
6. 3D STAR FIGHTER
7. PINBALL SIM
8. INTER RUGBY SIM
9. DEATH STALKER
10. BMX FREESTYLE
11. DIZZY
12. SUPER G-MAN
13. ATV SIM
14. GHOST HUNTERS
15. STREET FOOTBALL
16. JET BIKE SIM
17. SAS COMBAT
18. BIGFOOT
19. NINJA MASSACRE
20. FAST FOOD
21. ARCADE FLIGHT SIM
22. BMX SIMULATOR 2
23. THE HIT SQUAD
24. TRANSMUTER
25. PRO SKATEBOARD
26. PRO SKI SIM
27. VAMPIRE
28. 4 SOCCER SIM
29. TWIN TURBO V8
30. TREASURE ISLAND
DIZZY

Specifications correct at time of going to press



NOW YOU CAN LOAD COMPUTER GAMES FROM YOUR COMPACT DISC PLAYER

CodeMasters have developed their new CD Games Pack utilizing the latest CD technology to give you **30** top award winning games on one compact disc. Digitally recorded to make load errors a thing of the past, even with the games loading in as little as 20 seconds. All you need is a Spectrum, Commodore 64 or Amstrad CPC and a normal music Compact Disc Player.

ADVANTAGES OF COMPACT DISC GAMES

- Instant Track/Game selection
- Mega fast loading – as little as 20 seconds
- Maximum reliability, virtually no load errors – Digitally Mastered, Digitally Mixed, Digitally Recorded – DDD
- Massive storage capacity allows for many games on one compact disc
- Easy to use.

THE CODEMASTERS CD GAMES PACK INCLUDES:

- CD cable – to connect your CD player to your computer
- software – to allow ultra high speed loading
- Compact Disc – containing 30 excellent games.
- Full instructions – how to load and play the games.



£19.95

**SPECTRUM
COMMODORE 64
AMSTRAD CPC**

THE ACTION STARTS HERE.

CodeMasters, PO Box 6, Southam, Warwickshire CV33 0SH

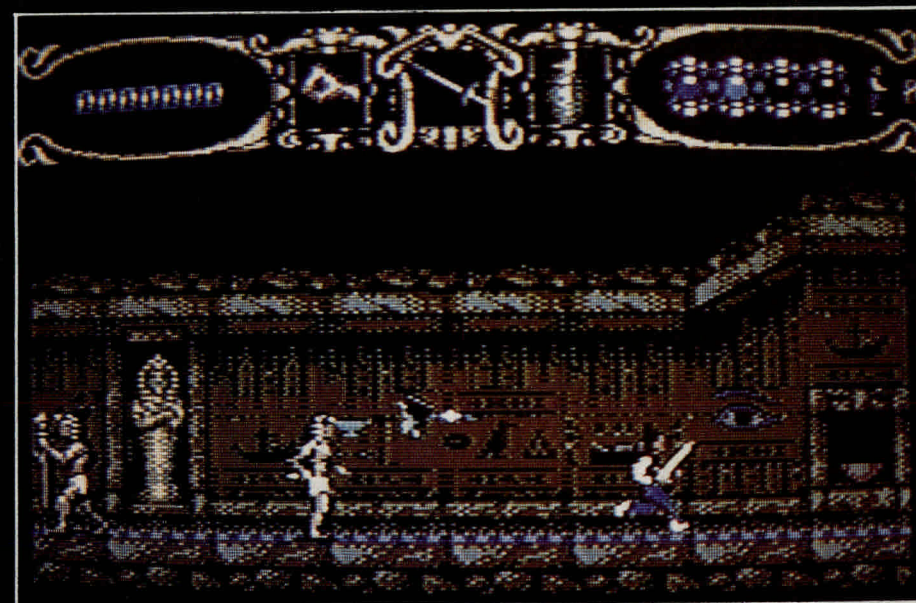
MYTH PREVIEW

Kati Hamza gets a sneak preview of a game she predicts may race up the charts

System 3

System 3 are diversifying. In their previous games, Last Ninja, Last Ninja 2 and the International Karate titles, the style leaned towards martial arts and fighting. Tusker, on the other hand, is more of an arcade adventure which concentrates on puzzles as much as quick-fire action. Myth, not to be confused with the Magnetic Scrolls adventure of the same name, is different again. There's a puzzle element but the bulk of the gameplay is arcade action pure and simple. And if the preview version is anything to go by, the final product should be pretty hot stuff.

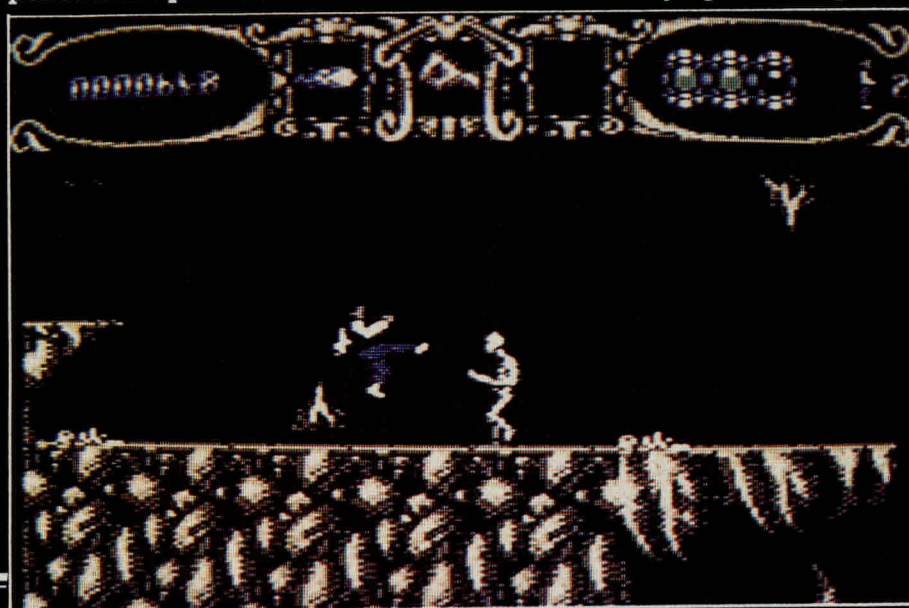
The project, which has taken about a year to develop, is centred around the idea that what has happened in the past is bound to affect



the future. That's why a message from thousands of years ago, informing you that the evil god Dameron is trying to mix up the

characters of ancient myth and legend is more than just minor cause for concern. If Dameron mixes up the past, the present will change irrevocably and nobody knows what the terrible consequences of that might be.

The quest to sort myth and legend out is divided into four separate loads, each of which contains three different sub-sections. Each of the first three loads is based on a different set of myths; Greek, Norse and Egyptian. The fourth part is the meditation section and has you floating rather than walking through some sort of a loophole in the space/time continuum. Getting through each part is basically a matter of fighting your way through Dameron's many henchmen and making it past several extremely large





monsters or gods that block your way.

Initially you're equipped with nothing more than the strength of your limbs and the power of your brain. However, some monsters do leave behind a selection of different weapons (anything from knives to fireballs) when they're hit. Occasionally, they also drop an energy module - handy for boosting up your dwindling strength. Whether you're carrying a sword or just fighting with your bare hands, the number of available fighting moves is very impressive. It's a selection of lunges, slashing actions, punches and kicks which you'd normally be more likely to find in a beat 'em up rather than in an arcade adventure.

The legends aren't just incidental either. When it comes to dealing with Medusa and the Hydra, it helps if you know a little bit about Greek mythology or, failing that, a working knowledge of a couple of films like Jason and the Argonauts will do. Coping with a huge statue of Achilles or a beckoning nymph isn't just a matter of hack and slay. You have to work out Achilles' weak point, and

watch out for the reactions of the nymph. A bit of brainwork is just as important as a lot of fighting brawn.

What singles Myth out from so many other arcade adventures is that all of these sections really are different from each other. In the first load, for example, you have to negotiate two 8-way scrolling sections of rocky platforms and ledges and a more standard horizontally scrolling Acropolis level. In the second part, you're immediately transported on to a Viking ship on which the objective is surviving against a time limit rather than exploration, before you enter a horizontally scrolling and an 8-way scrolling section again. The Egyptian part of the story, arguably the most tricky, has you exploring the inside of a pyramid, constantly watching out for devious traps and attempting to solve several complex puzzles. The meditation episode, with its eerie colours and atmosphere look like it's going to be the weirdest of the four.

Myth isn't finished yet, but the graphics already knock you back. The animation of the central character is incredibly smooth and

life-like; all his jumping, fighting and walking moves have to be seen to be believed. Some of the monsters look like Ray Harryhausen effects from a Hollywood movie; the stiff, awkward movement of the skeletons, for example, or the fire-drakes which gambol up to you like cute little lambs only to blow explosives in your face. The background designs are among the most inventive you're ever likely to see on the 64. On the Viking ship, you're in the middle of a storm complete with thunder and flashing lightning that makes it authentically difficult to see.

The only sound so far is a selection of realistic, sampled clanking, jumping and fighting effects. The final version should also have several in-game tunes which are bound to add something extra to the mythological feel.

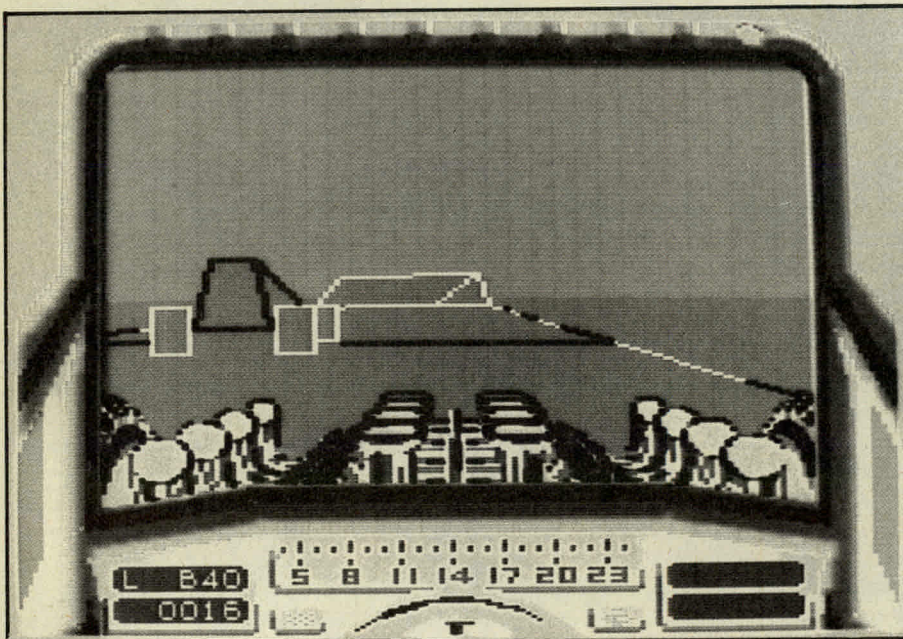
If the preview version is anything to go by, Myth should race up the charts. It already looks like one of the most challenging arcade adventures ever to be released for the 64, so with any luck the complete game, scheduled for release around Christmas time, should be even better. Watch out for a full review in CCI. *K.H.*

Stunt Car Racer

Microprose

Into a market on the brink of saturation from 3D race coin-op conversions, Microprose release an original competitor. The 64 and a 3D game design is often a recipe for disaster, as we have seen all too often with games

the four divisions, before winning the championship. Each division has three competitors, who compete in a total of six one-on-one races to decide the order of promotion and relegation. Two tracks are allocated to each division, beginning with the fairly tame Hump Back and Little Ramp, working up to the suicidal Roller Coaster and



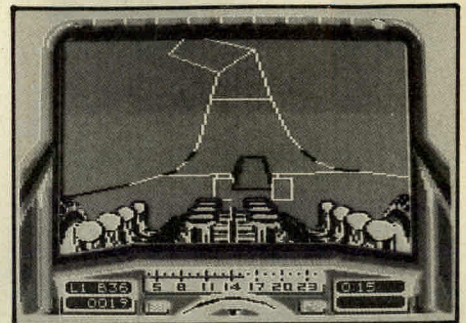
such as Afterburner and WEC Le Mans. Stunt Car Racer takes a new, more adventurous approach, using surprisingly fast filled vector graphics.

The game is like a hybrid of Hard Drivin and Power Drift, with a few ideas of its own. The object is to take your stunt car up through

Ski Jump.

Unlike normal race tracks, these are all built up from the ground, so you need the assistance of a crane to position the car on the start line. The race begins as soon as the crane drops the car. To avoid being overtaken by the computer-controlled opponent,

it's essential to make use of the turbo. Once you're in front, an occasional boost will maintain your position, as long as you don't come a cropper on one of the jumps, or overshoot a bend. Although the computer car is just a wedge with four square wheels, it speeds around the tracks and over the jumps extremely realistically. In fact, hanging just behind your opponent is a reliable way of taking each obstacle at the correct speed. One sneaky tactic is to do just that, and then power past your opponent at the last minute.



To keep up the speed of the graphics, your visibility is limited to a short way ahead. This is more than adequate to give time to react to the oncoming track, but it means your view is a little more restricted than it would otherwise be. As part compensation, before you race, a 3D display of the entire track can be scrutinised (plans of which are also included in the manual), so you're not just driving blind during the game.

Controls are responsive enough, and the difficulty level is about right. The graphics are an admirable technical achievement, although some exterior views or wing-mirrors would have done away with the slight feeling of detachment from the action. All things considered, Stunt Car Racer is a very enjoyable game, which has made about the best use possible of the 64's limited 3D vector capabilities.

T.H.

Graphics: 79%
Sound: 20%
Playability: 80%
Overall: 80%
Price: £9.99 (cass)
£14.99 (disk)

CAVENDISH DISTRIBUTORS LTD.

85 TOTTENHAM COURT RD, LONDON, W1 9AP.

TEL 01-323-4761

FAX 01-323-1399

AUTHORISED COMMODORE DEALERS.

ALL MACHINES UK SPEC LATEST MODELS

ALL PRICES INCLUDE VAT

AMIGA A500 BATPACK ONLY 369.00
AS ABOVE WITH 10 STAR PACK
AND PHOTON PAINT ONLY 389.00

AMIGA A500 SUPERPACK. Incl:
BATPACK, 10 SONY DISCS, MOUSE
MAT, MOUSE BRACKET, DUST
COVER, QUICKSHOT 2, DISC
STORAGE BOX HOLDS 80 PHOTON
PAINT ONLY 399.99

AMIGA A500 STARTER PACK. Incl:
BATPACK, KINDWORDS 2.0, FUSION
PAINT, CRAZYCARS, MINITURE GOLF,
SUPERSKI ONLY 399.99

AMIGA A500 WITH 1 MEG RAM
ONLY 459.00

AMIGA A500+PHILLIPS CM 8833
ONLY 585.00

MONITORS

PHILLIPS CM8833 ONLY 229.00
PHILLIPS CM8852 ONLY 269.00
CBM 1084S P.O.A.
NEC MULTISYNC 3D 549.00

A500/A2000 PERIPHERALS:

A500 RAM EXPANSION
ON/OFF SWITCH, CLOCK
+FREE COPY OF MOVIESETTER
ONLY 119.00
EXTERNAL 3.5" DRIVE ONLY 79.00

AMIGA B2000 SYSTEMS

DTP/CAD SYSTEM
AMIGA B2000
A2058 8MB RAM EXPANSION 2MB
POPULATED.
A2090/A2092 20MB H.D. AUTOBOOT
+ CONTROLLER FLICKER FIXER
RANGER 15" MULTISYNC
MONITOR P.O.A.

GRAPHICS/AUDIO VISUAL SYSTEM

AMIGA B2000
A2058 8MB RAM EXPANSION 2MB
POPULATED
A2090/A2094 40MB H.D.
AUTOBOOT+CONTROLLER
A2300 INTERNAL GENLOCK
A1084S COLOUR MONITOR P.O.A.

MANY PRECONFIGURED AMIGA
B2000 SYSTEMS AVAILABLE
CAD/DTP/GRAPHICS/Audio/Visual
ANY CONFIGURATION BUILT UP
PHONE FOR DETAILS

SPECIAL OFFER

AMIGA B2000
1084S MONITOR
20MB HARD DISK
PC XT BRIDGE BOARD
ONLY 1320.00

PERIPHERALS A2000/A500

A590 20MB H.D. ONLY 349.00

AMIGA A500 RAM EXPANSION
ON/OFF SWITCH, CLOCK
+FREE COPY OF MOVIESETTER
ONLY 119.99

EXTERNAL 3.5" DRIVE ONLY 79.00
RENDALE 8802 GENLOCK

+FREE COPY OF VIDEO GENERIC
MASTER ONLY 249.99
MINIGEN ONLY 99.99

PRINTERS

OLLIVETTI DM100S MONO
ONLY 149.00

OLLIVETTI DM105S COLOUR
ONLY 189.00

PANASONIC KXP1124 ONLY 289.00

NEC P2200 ONLY 279.00

EPSON LQ400 ONLY 229.00

EPSON LQ500 ONLY 279.00

EPSON LX400 ONLY 179.00

STAR LC10 MONO ONLY 179.00

STAR LC10 COLOUR ONLY 219.00

STAR LC24-10 ONLY 289.00

MONITORS

PHILLIPS CM8833 ONLY 229.00
CBM 1084S ONLY P.O.A.
NEC MULTISYNC 3D ONLY 549.00

ALL PRICES INCLUDE VAT

AMIGA 2000 PERIPHERALS

68020 CO-PROCESSOR P.O.A.

8MB RAM EXP 2MB POP P.O.A.

FLICKER FIXER P.O.A.

PC XT BRIDGE BOARD P.O.A.

PC AT BRIDGE BOARD P.O.A.

A2300 INT GENLOCK P.O.A.

MIDGET RACER 12 P.O.A.

MIDGET RACER 16 P.O.A.

SUPERPIC P.O.A.

RENDALE 8806 P.O.A.

GRAPHICS SOFTWARE

AEGIS ANIMATOR 59.00

AEGIS ANIMAGIC 59.00

COMIC SETTER 44.95

DESIGN 3D 59.00

DIGI PAINT 3 59.95

DELUXE VIDEO 54.95

FANTA VISION 34.95

P.A.S.E. 64.95

PAGE FLIPPER PX 119.00

PHOTO PAINT V2 64.95

PRO VIDEO PLUS 199.00

SCULPT 3D XL 129.00

SCULPT ANI 4D 399.00

SCULPT ANI 4D JNR 94.95

TURBO SILVER 105.00

ZEOTROPE 75.00

THIS IS ONLY A SMALL SELECTION

OF TITLES AVAILABLE

PLEASE RING

MUSIC SOFTWARE

A DRUM 34.95

AUDIO MASTER 2 64.95

DR T COPYIST PRO 189.00

DR T MIDI REC STUDIO 44.95

DYNAMIC DRUMS 47.95

DYNAMIC STUDIO 119.00

MUSIC X 189.00

OPUS 1 MCL 79.95

SOUND OASIS 64.95

AEGIS SONIX 49.95

STUDIO MAGIC 64.95

SYNTHIA 64.95

FUTURE SOUND 69.95

PERFECT SOUND 69.95

A.M.A.S. 79.00

PRO SOUND GOLD 64.95

REAL TIME SOUND PRO 89.95

WORD PROCESSING

BECKER TEXT 89.95

EXCELLENCE 149.95

KINDWORDS 44.95

PROTEXT 79.95

PROWRITE 2 69.95

SCRIBBLE (PLAT) 44.95

TRANSCRIPT 29.95

TEXTPRO 44.95

WORDPERFECT 4.1 189.00

D.T.P. SOFTWARE

CITY DESK V1.2 84.95

CITY DESK V2.0 129.95

PAGE SETTER 62.00

PAGE STREAM 149.00

PRO PAGE V1.2 189.00

DIGITIZING SOFTWARE

DIGI VIEW GOLD 3.0 129.00

DIGI DROID 64.95

VIDI AMIGA 94.95

CAD SOFTWARE

AEGIS DRAW 2000 P.O.A.

INTRO CAD P.O.A.

PRO BOARD P.O.A.

PRO NET P.O.A.

PRO DRAW P.O.A.

X-CAD DESIGNER P.O.A.

X-CAD PROFESSIONAL P.O.A.

VARIOUS

A-MAX+ROMS 219.00

MIDI MASTER 30.00

ASSEM PRO P.O.A.

A REXX P.O.A.

LATTICE C V5.0 P.O.A.

BBC EMULATOR P.O.A.

GOMF 3.0 P.O.A.

ACCESSORIES

MOUSE MAT 5.95

BOX 10 3.5" SONY DISCS 10.95

DUST COVER 5.95

MOUSE BRACKET 3.95

FOR ALL YOUR AMIGA NEEDS
JUST PHONE OR CALL IN

HORGAN'S HINTS

I was feeling in a cartographic mood this month, and had hoped to include another map this issue, but there's not much around at the moment that warrants mapping. Unlike other mags, who fill space with old material (last month a certain mag had just got around to publishing a map of the previous Batman game), we won't waste everyone's time and money with useless material. I'm sorry to disappoint anyone hoping to find a map of Turbo Outrun in this issue, and I also apologise for not reprinting any game instructions under the pretence of "playing tips".

Before we get stuck in, I have to say hello to David Dewar, and I must thank Wesley Hodges for his excellent map of Batman's first level which, had I not just finished my own when I received it, would have come in very handy. If you're still having a spot of bother with The Joker, I can recommend the chef's special, which you'll find at the top of this month's menu.

Batman The Movie Tape version...

Load the game normally and complete the first level. Now set the counter to zero, and load the second level. Lose all your lives, and wind the tape back to zero before pressing play. You'll restart from level two, only this time with infinite lives.

For disk users...

There's no SYS call here, so you'll need to enter them with something along the lines of the Action Replay or Power Cartridge. Freeze the game once it's loaded, and enter these pokes to replace the offending "DEC \$0404" command with three "NOP"s.

POKE 4866,234
POKE 4867,234
POKE 4868,234

Pacmania

First, here's an infinite lives poke from Goody, for anyone with a reset facility, to be entered after resetting the game.

POKE 28520,165
SYS 14336

For the same results, enter this listing from Daniel Dear before loading the cassette version.

```
1 REM PACMANIA CHEAT
2 FOR X=320 TO 357:READ Y:C=
C+Y:POKE X,Y:NEXT
3 IF C=3695 THEN POKE
157,128:SYS 320
4 PRINT "DATA ERROR":END
5 DATA
32,86,245,169,81,149,202,2,169,
1,149,203,2
6 DATA 96,72,77,80,169,
94,141,134,5,196,1,141,135
7 DATA 5,76,0,4,169,
165,141,104,111,76,0,56
```

Golden Talisman

Another cheat from Mr Dear: load the game, reset and enter the pokes below.

POKE 13458,173
POKE 13518,173
SYS 8192

Kane

Infinite lives courtesy of Goody.

Load and reset before entering:

POKE 8492,173
POKE 9090,173
POKE 9190,173
POKE 35832,173
SYS 3072

Kane II

Goody to the rescue once again in the sequel.

POKE 10493,173
POKE 10648,173
POKE 11694,173
POKE 36661,173
SYS 3072

C16

Sorry for the mistakes that crept

into the adventure decoder routine last issue. They were only minor syntax errors, so most of you eggheads probably worked out what was wrong yourselves. If not, make these alterations and all will be well.

Line 30 - Delete the first IF statement.

Line 80 - Insert a colon (:) between LOOP UNTIL A\$="R" and COLOR 4,1.

Arthur Noid

Bored with the same old screens? Try this screen designer from Steven Bell.

1. Load the game and enter the monitor
2. Between the locations M 1800 and M 1FE8, change any two digit number/letter (except C0 and D5) to:
57 (brown indestructible bricks)
56 (grey indestructible bricks)
55 (normal coloured bricks)
54 (space)
3. Type G 2000
4. To save your designer screens, type:
S "filename",8,1800,1FE8 (disk)
S "filename",1,1800,1FE8 (tape)
5. To load the designs back in again, first load the game, then your designs with:
L "filename",8 (disk)
L "filename" (tape)

AMIGA

Robocop

Pause the game and type BEST KEPT SECRET to enter the cheat mode.

Thanks go to Ady Knight for that and the following cheat.

Arkanoid II

To access the cheat mode, type ROBOCOPPER on the title screen.

Something for everyone in that lot, I'm sure you'll agree (although I'm bound to get a complaint about the lack of PET pokes). Anything you've got to offer, get it to me at the address below.

Tony Horgan

Horgan's Hints

CCI

40 Bowling Green Lane
LONDON
EC1R ONE

Athene Computers 0705 511439



Dept AF 16 Stoke Road Gosport Hampshire PO12 1JB



AMIGA PACK 1

Amiga A500 computer mouse, TV mod, WB 1.3 manuals
£349 inc.

AMIGA PACK 2

Amiga Pack 1 with 10 games, (worth over £250)
£379 inc

AMIGA PACK 3

Amiga A500 with 1084 monitor, and Plinth 5 blank discs
£589 inc

AMIGA PACK 4

Amiga A500, Philips 8833 monitor, Plinth & 5 blank discs.
Only £569 inc

AMIGA BUSINESS PACK

A500, 1084 or 8833 mon, second 3.5" drive, plinth, Platinum Scribbler software, STAR LC10 Printer.
£839 inc

AMIGA GRAPHICS PACK

A500, 1084 or 8833 mon. A590 20Mb Hdisk, 512k extra memory, DigiPaint 3, STAR XB-24 10 (24 pin) SLQ Colour Printer
£1435 inc

AMIGA A500

Custom PACK
CHOOSE
YOUR
OWN

All our products UK spec. Say No to Grey imports

AMIGA Drives

CUMANA CAX 354£85
NEC Drive.....£85 inc
CMB 1010.....£89 inc
CMB A590£380 inc
(20Mb Hard Disk)
Vortex 40Mb HD£510

Monitors

1084S.....£239
1084£239
Philips 8833.....£229
NEC Multisync II.....£479
NEC D range Available

AMIGA Enhancements

A510 RAM with On/Off Utility Software....£129 inc

A590 20Mb HDisk£380
512k Upgrade A590 ...£77

1Mb Upgrade for the A590.....£144

2Mb Upgrade for the A590£275

TV Mod.£19.99
Mouse Mat£4.95
Steel Monitor Stand..£14.75
Double Level Monitor Stand.....£22.95

PD Software (over 500 titles)£2.50 each
Send big s.a.e. for catalogue

Disks 3.5" from £7.50 for 10
5.25" from £9.00 for 25

AMIGA B2000

As a Commodore Amiga 2000 Dealer we are pleased to announce the launch of 20 new packs covering DTP, CAD, Audio Visual & Art Systems. Please phone to discuss your requirements

AMIGA B2000 1Mb, XT Bridge Card 20Mb Hdisk, 1084 Monitor.....£1598 inc

AMIGA B2000 1Mb RAM 3.5" Drive.....£1057

AMIGA B2000 Enhancements

XT Bridge Board.....£469
INT Genlock£210
A2058 8Mb Card 2Mb populated£759
20 Mb Hard Disk£399
Western Digital 32Mb XT Hard Card.....£228.85
68020, Memory, HD upgrades, please call.

STAR Printers

LC 10.....£159
LC 10 Colour£195
LC24-10£279

All Star Printers below include Free 1 yr on site warranty.

FR-10 (300cps)£379
FR-15 (wide)£495
XB24-10 (SLQ).....£496
XB24-15 (wide)£655
Colour Option£45



RING FOR THE



AMIGA BAT PACK

£399.99

INC VAT RRP

INCLUDES

'D' PAINT II

BATMAN THE MOVIE

F18 INTERCEPTOR

NEW ZEALAND STORY

TV MODULATOR

BATMAN POSTER AND MORE

See us at the following Shows:
Commodore Show Novotel 17th-19th Nov
Computer Shopper Show 24th-26th Nov

Power Drift

Activision

You can hear the roar of the engine as you turn to see the lights change from red through to green. But wait a minute, this is no Ferrari and where's that buxom blonde got to? Well, you'll just have to wait until you complete the game before you get anywhere near a blonde.

Power Drift is the name of the game, and comes to you courtesy of Sega and Activision. Unlike some of Sega's former coin-ops, Power Drift is designed for the more mean and ill-mannered player. For example, each time you gain a position, a rather less than polite gesture is made by your driver as you zoom past at a terrifying pace.

"The tracks are much shorter than in most race games, but there is no time limit to keep up with."

You can choose who you want to be represented by, from a line up of twelve odd-looking characters, male and female. In addition to this are five different courses, each having five tracks to be completed. The tracks are much shorter than in most race games, but there is no time limit to keep up with. Instead, you have to finish in at least third position to qualify for

the next race. The five courses all have their own scene, for example on track "E" the graphics are generally made up of iron girders and

"The only problem with it being so fast is that you need lightning reactions, especially in the later tracks."

flyovers, and on track "A" you have to survive the rocky terrain and advertising boards.

Ramps, bridges, gaps and the

danger of falling off the raised parts in the track are some of the hazards you'll have to overcome, and believe it or not, the game still runs at an amazing speed. The only problem with it being so fast is that you need lightning reactions, especially in the later tracks.

Power Drift is easy to get into because it's quite a straightforward game - all you really have to do is accelerate and change from low to high gear whilst speeding round the track. This means that just about anyone can play it, be-



AMIGA

On the Amiga version you get the option of using a mouse control as well as a joystick. The sensitivity can be altered if required as in Super Hang-On.

When you start a game you get the aerial view as the camera zooms in on the action just like the arcade version. The still graphics look superb, but as you play the game you realise they don't move as well as they look, being rather jerky. At times, it's almost impossible to see what is going on and gets very confusing, so half the time you just have to guess which direction to go in. The thing I liked most was the speech. It's clear and there's plenty of it.

The main problem with Amiga Power Drift, is that it's too easy to play because of the continue option after each game. Therefore, lastability is not a main factor. Fun for a short while, but the 64 version is better conversion considering both machines' capabilities, and plays better for it.

Graphics: 80%
Sound: 85%
Playability: 70%
Overall: 72%
Price: £24.95

cause it may be a simple idea but it's a very effective and addictive one.

I was very impressed with the 64 version of Power Drift, because every track and course is loaded up in one go, so you don't have to wait during play. On first playing, you might think it's an easy game

"On previous tracks you can take the corners at top speed (224 kmh), but as you progress you'll have to start slowing down at the bends."

to complete, but come track four and all these thoughts will disappear. On previous tracks you can take the corners at top speed (224 kmh), but as you progress you'll have to start slowing down



at the bends or you car (or should I say souped up lawnmower), will be sent spinning off the track time after time.

On the 64 version there are no road markings, so at times when there's no roadside scenery it looks as though you're not moving at all. Another minor flaw is when you crash, because sometimes you are put back on the road but right in front of a rock, resulting in an unavoidable crash.

A soundtrack plays throughout the game but there are very few FX - a bit of speech would have gone down well.

You will have to watch closely or you won't appreciate some of

the graphics that flash past. Use of colour is good and the sprites are well detailed and unblocky. I would be surprised if Power Drift doesn't make it to the top of the charts at Christmas - at last, an arcade conversion which is far from disappointing. A must for all racing fans.

D.H.

Graphics: 88%
Sound: 65%
Playability: 89%
Overall: 87%
Price: £9.99 (cass)
£14.99 (disk)



NEW FOR YOUR COMMODORE FROM TRILOGIC!

AMIGA AUDIO DIGITISER

— NEW, CHOOSE MONO OR STEREO VERSION

Both Amiga audio digitisers give superb performance, unsurpassed at the price. No software is supplied, since they are fully compatible with Perfect Sound, Prosound Designer, Audiomaster, and Datel's Prosampler. Sampling rates up to 60KHz are possible depending upon the software. An audio lead is supplied for connecting to the headphone socket or line output of a radio, personal stereo, keyboard etc. Full instructions are included, and the mono version also has an L.E.D. overload indicator. A public domain "Sound Workshop" disk is available which has demo versions of Audiomaster & Perfect Sound etc.

MONO DIGITISER £27.99 POST FREE STEREO DIGITISER £37.99
SOUND WORKSHOP DISK FREE WITH DIGITISER
ADAPTOR FOR A1000 £2.00

EXTERNAL 3.5" DISK DRIVES

- 880K FORMATTED CAPACITY
- THROUGH POST
- SLIMLINE STEEL CASE
- 3.5" DRIVE WITH ON/OFF SWITCH
- VERY QUIET OPERATION
- LOW POWER CONSUMPTION

AMIGA MONITOR & PRINTER LEADS

RGB TV & MONITOR LEADS

We have leads to connect all AMIGAS to your TV or colour monitor provided it has an RGB input socket. All leads give a much clearer picture than using the AMIGA MODULATOR, permit ALL 4096 colours to be displayed and include the audio lead (to give stereo with stereo tv's).

- ORDER AL 1 FOR TV'S WITH 21 PIN EURO (SCART) SOCKET. FITS PHILIPS, FIDELITY, SONY, GRUNDIG, NORMENED, ETC. ONLY £10.99
- ORDER AL 2 FOR FERGUSON TV'S WITH 7 or 8 PIN DIN SOCKET. MODELS MC01 & MC05, ETC. ONLY £10.99
- ORDER AL 4 FOR HITACHI & GRANADA TV'S WITH 7 PIN DIN SOCKET. MODELS CPT1444, ETC. ONLY £10.99
- AMIGA TO MULTISYNC MONITOR (analogue RGB) AL11 £9.99

MANY OTHER AMIGA MONITOR/TV LEADS LISTED IN OUR FREE CATALOGUE.
OUR LEADS ARE GUARANTEED TO WORK WHERE OTHERS DON'T!
LEADS ALSO AVAILABLE FOR ATARI/ST RANGE. PLEASE CONSULT US IF IN DOUBT.

NEW — MONITOR SHARER

SHARE 2 COMPUTERS WITH ONE TV/MONITOR

Plug-in the scart leads from any two computers eg AMIGA & ST, and connect the SHARER to the tv or monitor's scart socket. Just press the switch to instantly select either computer MSWI £15.99

OTHER LEADS

- AMIGA 64 EMULATOR LEADS AEL 1 ONLY £4.99
- MODULATOR EXTENSION LEADS MEL 1 ONLY £8.99
- AMIGA PRINTER LEAD — Parallel Type 1.5M long AMP 1 ONLY £6.99
- 3.0M long AMP 3 ONLY £9.99
- AMIGA A500/BBC EMULATOR LEAD BE1 ONLY £7.99
- AMIGA A500 TO SERIAL (RS232) PRINTER 1.5m RS1 ONLY £9.99
- AMIGA A500 TO MODEM (25W 'D') 1.5m RS6 ONLY £9.99
- AMIGA NULL MODEM LEAD — LINKS TWO A500s 1.5m RS5 ONLY £7.99
- AMIGA TO HIFI LEAD 3m 2 PHONO PLUGS EACH END HL1 ONLY £4.99
- AMIGA TO HIFI LEAD 5m 2 PHONO PLUGS EACH END HL2 ONLY £5.99

OTHER LENGTHS OF LEAD AVAILABLE — PLEASE SEE OUR CATALOGUE

EXTERNAL DRIVE SWITCH FOR DF1 ADE3 ONLY £8.99

EXTERNAL DRIVE SWITCH FOR DF1 & DF2 ADE4 ONLY £10.99

PLEASE STATE WHICH AMIGA YOU HAVE WHEN ORDERING

MOUSE/JOYSTICK SWITCHER

- NO MORE UNPLUGGING MOUSE WHEN JOYSTICK REQUIRED
- EXTENDS THE PORT FOR EASIER ACCESS
- SAVES WEAR & TEAR ON THE MOUSE PORT
- PUSHBUTTON SWITCH CAN BE OPERATED WHEN THE COMPUTER IS ON

NEW COMPACT DESIGN £12.99 order as DJA1

AMIGA MINI STEREO AMPLIFIERS

MINIAMP 2 combines a mini stereo power amp with two neat speaker units which connect directly to your AMIGA. They are ideal for use with mono TV's & monitors, & simply plug in for instant stereo sound. You'll be amazed at the difference. **MINIAMP 2 WITH REMOTE VOLUME CONTROL & ALL LEADS ONLY £19.99**

MINIAMP 4 comprises separate 4 watts per channel high quality mini stereo amplifier with loudspeaker/headphone socket, separate speaker units with 4" twin cone drivers, mains power pack & connecting lead for AMIGA.

CAN BE USED AS 'WALKMAN' BOOSTER & WITH OTHER COMPUTERS

MINIAMP 4 STEREO AMPLIFIER SPEAKER SYSTEM MA4 £34.99

NEW — AMIGA MIDI INTERFACES

- MIDI INTERFACE 1 FOR A500/2000 OR A1000 MIF1 £29.99
This has MIDI IN, OUT & THRU sockets.
- MIDI INTERFACE 2 FOR A500/2000 OR A1000 MIF2 £34.99
This has MIDI IN, MIDI OUT, MIDI THRU plus 2 UNIQUE switchable MIDI OUT/THRU SOCKETS to save you having to swap MIDI leads when using more than one MIDI instrument. **FREE MIDI LEAD WITH BOTH INTERFACES**

SUNDRY ITEMS — BARGAIN PRICES

- SONY 3.5" DISKS 100% Guaranteed DS/DD disks**
- Lowest Prices ... Per 10 **£12.99 & Postage** Lowest Prices Per 25 **£28.49 Post Free**
- Lowest Prices ... Per 50 **£55.99 Post Free** Lowest Prices Per 100 **£99.99 Post Free**
- 3 1/2" DISK BOX FOR 40 DISKS. SMOKED LID, LOCKABLE, DSB4 ONLY **£8.49**
- 3 1/2" DISK BOX FOR 80 DISKS. SMOKED LID, LOCKABLE, DSB6 ONLY **£9.99**
- A500 DUSTCOVER. ANTISTATIC TYPE, ADCL ONLY **£4.99**
- A4 NON-SLIP MOUSEPAD, AFM1 ONLY **£4.99**

WE ALSO STOCK AMIGAS, PCs, PRINTERS, MONITORS, HARD DISKS, MEMORY EXPANSIONS, VIDEO DIGITISERS, SELECTED SOFTWARE & BOOKS — PHONE FOR OUR FREE 20 PAGE CATALOGUE. TRADE ENQUIRIES WELCOME. Please add 75p part postage + packing to orders under £15.00

FREE CATALOGUE WITH ALL ORDERS EXPRESS DELIVERY £1.99 Extra



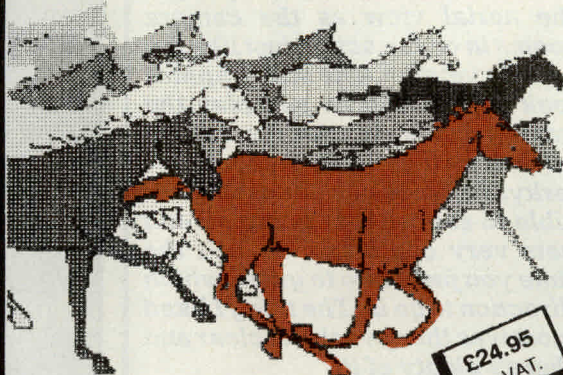
TRILOGIC, CODE CB Unit 1. ENQUIRIES ☎ 0274 678062
253 New Works Road, Bradford BD12 0QP
Tel 0274-691115 Fax 0274 600150

FAST MAIL ORDER SERVICE - PROMPT DESPATCH - ALL PRICES FULLY INCLUSIVE PLUS 10 DAY MONEY BACK GUARANTEE ON ALL ITEMS. PAYMENT BY CASH, CHEQUES PAYABLE TO TRILOGIC BY POSTAL ORDER, ACCESS OR VISA. ADD £2.99 EXTRA FOR EXPORT ORDERS, PAYMENT IN STERLING ONLY PLEASE.

you can bring THE LIVING to your Amiga screen

Real Things
ANIMATION

The series that brings you action-art of real living things



£24.95
inc. VAT.

Horses Horses Horses Horses

Requires Amiga 500, 2000 or 1000 (1 Meg minimum) & DeLuxe Paint III

FROM YOUR DEALER

Produced by RGB STUDIOS - Distributed by DIGIPRO LTD
RealThings Animation Series runs in DeLuxe Paint III, by Electronic Arts, and requires Amiga with 1 Meg min.

I.C.P.U.G

the Independent
Commodore Products Users Group
is the largest and most friendly
computer club in the country

- Many local groups with regular meetings
- Superb newsletter magazine with an average of 90 pages, bi monthly
- Back issues 1989 available to all. £2.50 each
- We support all CBM, Pet, Vic 20 and all Amigas
- FREE Software Library of PD programs for all machines
- Over 300 disks of Amiga PD software available free to members plus p&p
- Help and Advice. Discount scheme
- Subscription only £17.00 including £1 Share in ICPUG Co-op
- Before applying for any software please wait for your membership details to be sent to you
- Overseas prices on application

If you are seriously interested in using or programming any Commodore computer, then joining ICPUG is a must!

For full details, send a stamped addressed envelope to:



ICPUG Membership Secretary, Jack B. Cohen,
30 Brancaster Road, Newbury Park,
Ilford, Essex, IG2 7EP
01-590 8849 Day — 01-346 0050 Even & W'ends.

STAR BUSTERS

Commodore AMIGA A500

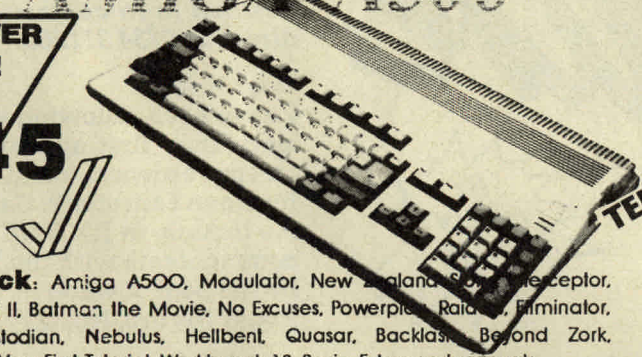
**LOWEST
PRICES
IN U.K.**

A501

RAM Expansion. SAVE £20,
only £115

SAVE OVER
£300!
ONLY

£345



Star Pack: Amiga A500, Modulator, New Zealand, Powerceptor, Deluxe Paint II, Batman the Movie, No Excuses, Powerplay, Raiders, Eliminator, Exelon, Custodian, Nebulus, Hellbent, Quasar, Backlash, Beyond Zork, Modulator, Very First Tutorial, Workbench 1.3, Basic, Extras and manuals.

TEL: (0224) 593024

**Commodore 64
STAR-PACK
ONLY £129**

C-64, Cassette Recorder, Light Gun, 3D Glasses, Time Traveler, Gangster Town, Army Days, Mike Reids Pop Quiz, Batman the Caped Crusader, Introduction Tape, Typing Tutor, Music Creator, Art Package, Shoot-em-up Construction Kit, Combat School, Hypersports, Platoon, Rambo III, Robocop.

We are Authorised dealers for most makes of Computer products. Please phone for more info.

ATARI POWERPACK



Over £550 of software
FREE! ONLY £335

AMSTRAD PPC 512



Get a **FREE** Portable, Hand
Held Phone with every PPC!!

FULL RANGE OF
AMSTRAD AVAILABLE,
IN STOCK FOR XMAS!

ONLY £379
SAVE £100's!!!

**SAVE £100 on this Printer!!
ONLY £149**

HURRY!

ONLY 66 LEFT IN STOCK!

The Commodore MPS 1230P Printer features both Serial and Parallel ports, IBM & Epson compatability. This versatile printer will hook-Up to almost any computer system. This printer usually sells for £249 + VAT.



Our Promise!

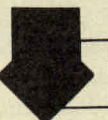
We pride ourselves on the reputation that we have enjoyed both in the retail and mail order sectors for the past few years, being THE most efficient Computer Centre in Scotland.

We realise that no other company involved in mail order does this too, but we know that our growth is due, not to a one-off sale, but to continued support from our customers.

Usually all goods should be dispatched within 24hrs (Or the same day) by first class post. (Courier delivery will be charged at cost if required.)

We know that you won't be disappointed by our service...TRY US!

ALL PRICES EXCLUDE VAT, ADD £3 PER ITEM FOR DELIVERY. E&O.E.



STAR UK
BUSINESS COMPUTERS LTD



TEL: 0224 593024

Home Computer Centre: 50 Bridge Street, Aberdeen. AB1 2JN.
Tel: 0224 593024 / 571230 / 574446. FAX 0224 647796

Business Computer Centre: 9-11 Rosemount Place, Aberdeen, AB2 4UX.
Tel: 0224 646206

**CHECK OUT
OUR
PRICE MATCH
PROMISE!**

HO! HO! HO! A SEASONAL GREETING TO YOU ONE AND ALL. IT IS THE TIME WHEN GOODWILL IS SHOWN A - PLENTY, AND LARGE DOLLOPS OF DOSH ARE SPENT ON STOCKING FILLERS. WHAT BETTER TIMING THEN THAN TO HAVE A MEGA REVIEW OF ALL THE LATEST ADVENTURES? SPEND YOUR MONEY WISELY, READ HERE FIRST

Adventure

BY
ANDY
MOSS

COMMENT

After last months in depth round up of all the latest adventures in the pipeline, the news desk is looking decidedly short of...., news. Just as well really, as it gives me more space to review quite a few new releases in time for the great shopping trips. BLOODWYCH, SCAPEGHOST, DEMONS WINTER, THE QUEST FOR THE TIME BIRD, OOZE AND SWORDS OF TWILIGHT are all under the Moss cosh this month, along with some of your letters. But first...

THE ADVENTURERS CLUB MYSTERY IS SOLVED

After many months of silence, innuendo and rumour, Henry Mueller has finally come out of hiding to reveal a new style Adventurers Club and a complete answer to his disappearance. He says 'Basically the Club was not financially viable under the then existing circumstances, and we suspended trading. It is a criminal offense for a company to continue trading if it is believed to be insolvent. Rather than just liquidate, and let down all our members, we decided to fight on by creating a totally new concept, one that would be much more viable. Our silence while not exactly a lesson in PR was due to our complete re-valuation and we did not want to mis-inform our members while this process was going on. Our new concept is titled the Reference Book Of Adventure,

and will consist of a deluxe binder with 26 sections, each detailing a different facet of adventuring. We will publish pre-drilled, numbered and referenced sheets which will each be filed in its own place in the folder. That way updates can be replaced, and information can be retained. All existing members registration fees will be transfered, the only extra cost will be for the binders which will cost £6.95.

On one hand, it is comforting to know that Henry is trying his best, on the other, I will reserve judgement until I see the fruits of his labour.

HOUND OF SHADOW UPDATE

The latest batch of oddities from EA include a manual about the history of Holy Trinity Church in Blythburgh, a train ticket and a postcard. Curiouser and Curiouser!

ADVENTURE POSTBAG

Dear Andy,
Could you help me, I understand you can buy an adventure called LABRYNTH based on the film. Where do I get it please?
Debbie Hunt, Kent

Labyrinth is a Lucasgame product that was released by Activision in this country. Yes, it is based on the film and yes, it is available still from certain software retailers.

Best bet is to contact Activision direct on 0734 311666.

Dear Andy,
I have been following your pages since they first appeared in CCI and have always found them helpful when I am stuck. Can you help me though, in JOURNEY I cannot communicate with the Elfin Lady by the pool of water.
Roger Myhre, Norway

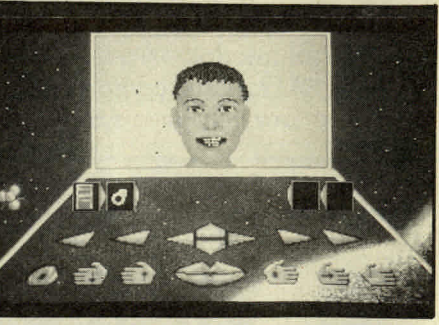
You only have to say two words Roger, B' RAN AGRITH. Also take note of everything that Praxix says about the essences, as at the end a nasty puzzle will confront you about which colour essence you need. It changes with each game!

Dear Andy,
I have had my 64 for around 4 years and have been playing THE HOBBIT for about that long! I cannot kill the dragon. Please Please help me.
J Gardiner, London

The only way to kill the Dragon is to get him to follow you somehow. Once you have worked that out, lead him to a wet place!

EMPIRE TO RELEASE TIME

Time, is the title of an new animated adventure from Empire. It sounds like a Lords Of Time scenario with you chasing across



famous eras of the past, in the Lions den at the circus Maxixmus in Ancient Rome, getting shot at in

the Crimean War and being accosted by the model for the Mona Lisa, even getting a lesson in magic from Merlin. You are from the future, and must create the perfect android, by finding a discarded time machine and journeying into the past. An interesting icon control system is used (see pics) and it all sounds quite exciting.

ADVENTURE REVIEWS

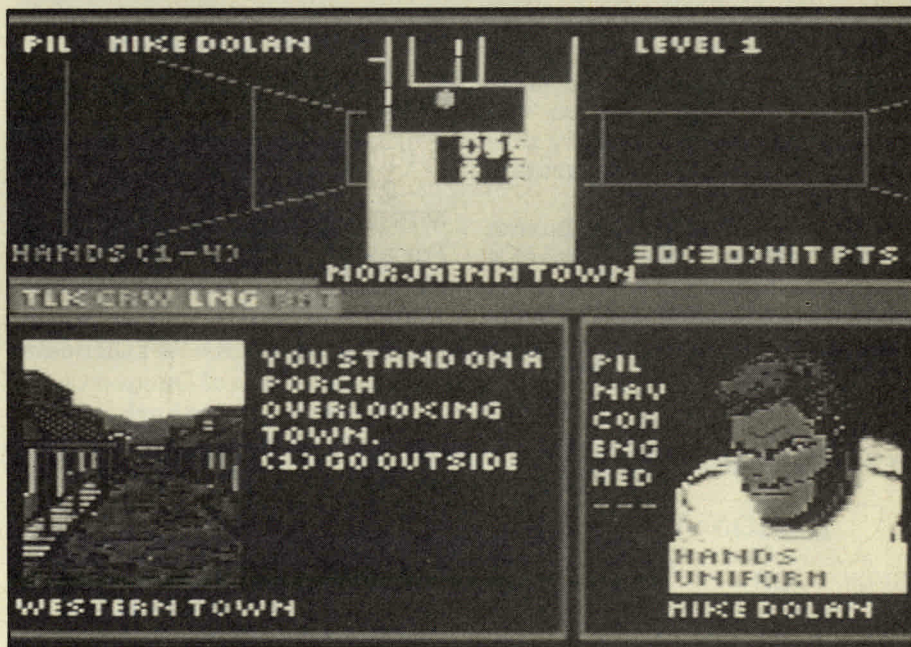
SCAPEGHOST

LEVEL 9
64/AMIGA/PC

This game marks a landmark in Level 9 adventures, as it is the very last text only product. **WHAT!** I hear you gasp? Yes folks, the Austin boys have taken this decision as they feel that technology demands it. With the increasing memory and speed that today's home micros are capable of providing, they want to see computer adventuring moving on to bigger and better things, which means the traditional text game is dead. More about their new plans another time but for now let us concentrate on Scapeghost. In this story, (originally thought up by Sandra Sharkey and our own Pete Gerrard) you play the part of a murdered detective, Alan Chance, who was on an undercover drugs mission before his/your untimely death. Someone had alerted the drugs gang and betrayed you, whilst your colleagues in blue feel you made a tragic mistake and brought about your own demise. You have three nights as a ghost, to disprove these accusations, and clear your name. The game uses a great deal of Level 9's character interaction techniques, as you enlist the help of other ghosts in the cemetery to assist you in your mission. At the beginning you have very little strength, and so can only lift one particular item, once done you gain a bit more strength, until finally at the end of part one (there are three parts) you are strong enough to develop other ghostly powers, which will prove invaluable in part two.

Level 9 use what they call 'racetracking' a high level command that lets you go from one named place to another in the

HERE ARE SOME EXCLUSIVE RPG'S DRAGON WARS AND SCREEN SHOTS OF EA'S NEW SENTINEL WORLDS. LOOKING GOOD AREN'T THEY?



game without tedious retyping directions. Very useful when you have explored most of the area and are wanting to get from a to b quickly. The graphics are very pretty, and scroll mag slides up the page as you wish. There is RAM save and load for those sticky moments, and best of all, you can't really die, can you? The usual high quality release from a very talented company.

PERSONAL RATING.....8

THE QUEST FOR THE TIME BIRD

INFOGRAMMES AMIGA ANIMATED ADVENTURE

This release is another of Infogrammes computer versions of classic novels. Similar in play to Passengers on the Wind, TIME BIRD is a much meatier subject with plenty of hack and slay and magic. The graphics are really pretty, with some fine animation and sound sequences, the only

continued on page 56

continued from page 55

thing that lets it down is the rather clumsy icon arrangement. This is something that Infogrammes never really get right, Passengers on the Wind suffered from an incredibly fussy command system, Murders in Venice also, so it must be said that QUEST although to a lesser extent, has a similar problem. The plot concerns the land of Akbar, and its possible take-over by the evil Ramor who has decided that his ascension to the throne will take place in 9 days.

Your quest is first to locate the legendary Time Bird whose powers to freeze time will give your forces the breathing space to defeat the evil lord, and then to locate and decipher the incantation that holds your God Ramor prisoner in his Conch shell. Travel is shown on a map screen where an illustrated and animated 'narrator' pinpoints your destinations. When you arrive at your destination there is an initial background screen, on which extra windows appear where necessary to illustrate any events that occur. Also there is a box for text which scrolls up giving you clues and info. There are riddles to solve and treasure to locate, all richly presented using immaculate graphics.

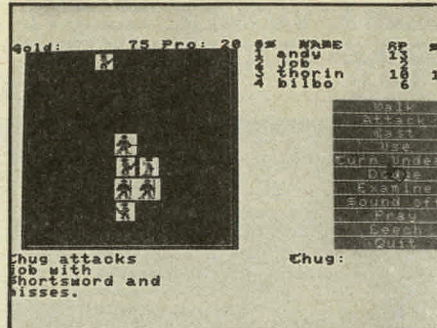
Ablly assisted by your buxom friend Roxanna, you will meet a few more characters who will join your quest. If it wasn't for the fussy icon display I would have gone head over heels for this game. As it is, it loses points but is still a beautiful product.

PERSONAL RATING.....8

DEMONS WINTER

SSI/US GOLD
C64/AMIGA RPG

This RPG from SSI is effectively the sequel to SHARDS OF SPRING, although I feel far from being an improved product is significantly poorer. The Amiga version is poorly programmed, and is no better graphically than an average 64 game. The 64 version is passable, but lacks any new ideas from the traditional SSI approach. The plot is fairly boring, you have to scour the landscape for the spells needed to contain the Demon Malifon inside his volcano, rather than let him out to cause havoc.



Although he is inside his volcano, he still had the power to turn the landscape into a frozen wilderness, and the oceans into crimson blood. So your party of five brave souls sets off for adventure.

Apparently Demons Winter is some 32 times bigger than Shard Of Spring, and many locations are still there for old times sake, (the events have moved forward some 5000 years) but that doesn't make up for a game which has no real identity of its own. It is a sad clone of many other RPG's with a tired plot and a well worn design. I must say I am finding this style of RPG very tedious nowadays and it is high time a new approach is looked at.

PERSONAL RATING.....2

BLOODWYCH

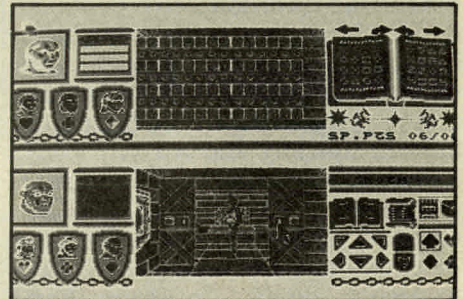
MIRRORSOFT AMIGA RPG

For all you frustrated DUNGEON-MASTER fans who do not have the 1Mb memory required to play it fret no more. BLOODWYCH bears all the hallmarks of Dungeonmaster, goes one step further by allowing simultaneous play by two players using a split screen technique, and packs it all into 500K. You are one of the Bloodwych, and must take on the persona of one of the last sixteen champions of Trazere (sound familiar?) You must then explore the dungeon-like world of Treihadwyl to recruit more champions (also sound familiar?) and then explore the corridors and rooms for the four crystals of Storing. Then you go to the fifth tower and destroy Zendick to the realm of chaos freeing the world from the Lord of Entropy.

The screen layout of Bloodwych is almost identical to Dungeonmaster, the only obvious

difference is the two player option.

The split screen effect is lot like the old Epyx racing game Pit Stop II with each horizontal slice exactly duplicated, with the same icons and first person perspective in each. Communicating with the characters in the game is rather novel, as each character has a fair degree of intelligence built in, so skillful communication could prove very useful. There are a number of initial conversation options, RECRUIT, IDENTIFY, INQUIRY, WHEREABOUTS. You then get a second sub menu which shows OFFER, PURCHASE, EXCHANGE, SELL. SMALLTALK is another option which gives you another sub menu, YES/NO, BRIBE, THREAT, COMMEND, CORRECT. So you can see there is a fair amount of flexibility here. Magic is of course of paramount importance, and spells must be mixed before they can be used, em-



playing the book of spells that each champion carries. Bloodwych is a marvellous attempt by Mirrorsoft to recreate Dungeonmaster for the many thousands of 512K Amiga owners, and there is a version coming out on 64 in the near future. Full marks all round.

PERSONAL RATING.....9

THAT'S ALL THE ROOM I HAVE THIS MONTH, HOWEVER, NEXT MONTH THERE WILL BE ANOTHER BATCH OF REVIEWS INCLUDING MURDERS IN VENICE, CURSE OF THE MUMMY, DAYS OF THE PHAROAH AND SPACE QUEST III. NOT FORGETTING THE REST OF THE BARDS TALE II SOLUTION. SEE YOU THEN... IN THE MEAN TIME HAVE A MERRY XMAS AND MAY YOUR STOCKING ALWAYS REMAIN FULL.



ACE BRISTOL COMPUTERS

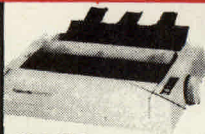
MICRO SPECIALIST
BRANCHES THROUGHOUT THE UK

MAIL ORDER
FROM BRISTOL
ADDRESS
ONLY



BRISTOL : 30 Cannon Street, Bedminster..... Tel: 0272 663312
 BRISTOL : 42 Canon Street, Bedminster..... Tel: 0272 637981
 BRISTOL : 3 North Street..... Tel: 0272 666341
 CARDIFF : 87 City Road..... Tel: 0222 483069/471600
 NEWPORT (Gwent) : 54 Commercial Road..... Tel: 0633 212176
 WESTON-S-MARE : 16 West Street..... Tel: 0934 419040
 SWINDON : 31 Farringdon Road..... Tel: 0793 512073/4
 HASTINGS : 36 Robertson Street..... Tel: 0424 422929

Panasonic Printers



KX-P1081

- 120 CPS DRAFT
- 24 CPS NLQ
- IBM/EPSON COMPATIBLE
- FRICTION AND TRACTOR FEED
- CENTRONICS

£129 + VAT
= £148.35



KX-P1180

- 192 CPS DRAFT
- 38 CPS NLQ
- 4 BUILT IN FONTS
- IBM/EPSON

£160 + VAT = £184.00



KX-P1124

- 24 PIN PRINTER
- 192 CPS DRAFT
- 38 NLQ
- EPSON LQ + IBM EMULATION MODE

£273 + VAT = £314.00

LASER KX-P4450

- 300 DPI
- 512 MEMORY
- SERIAL PAR
- 1 YEAR ON SITE WARRANTY

£1400 + VAT
= £1610

HARD CARDS & HARD DISKS

	EX VAT	INC VAT
21 MBYTE.....	190	219
32 MBYTE.....	225	269
42 MBYTE.....	286	329

ALL HARD DISKS ARE FORMATTED PLUS FREE SOFTWARE

Archimedes

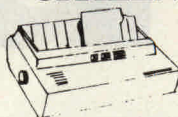


	EX VAT	INC VAT
A3000	£599	£688.85
410/1	£1025	1199
410/2	£1450	1567
440		
BASE.....	£2147	2469.00
MONO.....	£2187	2515.00
COLOUR.....	£2300	2645.00
PC EMULATOR.....	£68	78.20

NEC MULTISYNC MONITORS

MULTI II.....	£460	529.00
---------------	------	--------

CITIZEN



1
2
0
D

- ★ 120 CPS DRAFT
- ★ 24 CPS NLQ
- ★ FRICTION AND TRACTOR FEED
- ★ 4K BUFFER

£120 +VAT -£138

HQ - P45 24 PIN
WIDE CARRIAGE
£340 +VAT -£391

EPSON PRINTERS NEW LX850

£199 +VAT = -£228.85
LQ 550

£280 +VAT - £322

MANNESMAN TALLY The NEW

- DRAFT 130 CPS £120
- NLQ 24 CPS +VAT
- CENTRONICS -£138

ATARI 520STFM "Power Pack"

Mouse, Built in TV Modulator & Cables plus 23 Software titles (worth over £500), FirST Basic, Musicmaker, Organiser and Joystick

£303.45 + VAT -
£349.00

AMIGA B2000

Internal 3 1/2" Disk Drive, Workbench 1.3, AmigaBasic, Mouse and Manuals
Now with new 1 Megabyte Graphics chip

£869.57 + VAT -
£1,000.00

AMIGA A2000

Internal 3 1/2" Disk Drive, Workbench 1.3, AmigaBasic, Mouse and Manuals
Philips 8833 Colour Monitor, PC XT Bridge Board, 5 1/4" 360K PC Disk Drive, 20 Megabyte Hard Drive

£1380 + VAT -
£1587.00

ATARI 1040STFM "Ultimate Pack"

Mouse, Built in TV Modulator and Cables PLUS

HyperPaint, HyperDraw, FirST Basic and Organiser also includes a £50 voucher towards other ATARI titles

RRP £499.99

£417.39 + VAT -
£479.99

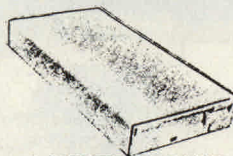


AMIGA A500

BATMAN PACK

Workbench 1.3, AmigaBasic, Mouse, TV Modulator, Power Supply Unit and Manuals
Plus all this FREE Software
Batman, New Zealand Story, F18/A Interceptor, Deluxe Paint II, Zynaps, Mercenary, Batflash, Quadralien, No Excuse, Powerplay

£339 + VAT -
£389.85



1 MBYTE SECOND DRIVE ONLY
£69 + VAT
£79.95
512K RAM ONLY £86 + VAT
£99

AMS ADVANCE
BUSINESS CENTRE

star Printers

LC-10 & LC-10c

- 6 BUILT IN POINTS EX VAT INCL VAT
- 120 CPS
- 30 CPS NLQ
- 4K BUFFER

£139 £159.95

LC-10 COLOUR

- FULL COLOUR PRINTER
- PLUS ALL THE ABOVE FACILITY

£190 £218.50

LC-24

- EXCELLENT 24 PIN
- NLQ-BUILT IN FONTS

£230 £264.50

NB24

- INCL FREE CP

£420 483.00

NX-15

- WIDE CARRIAGE

£286 328.90

NB24-15

- 24 PIN WIDE/C

£550 623.50

PHILIPS MONITORS

	EX VAT	INC VAT
Mono 7502	£68	£78.28
Col 8833	£225	£258.75
Col 8852	£268	£299.90

COMMODORE 54

"Light Fantastic Pack"

Commodore 54, C2N Datacassette, Light Gun, 3D Glasses, 10 Games including Batman (The Caped Crusader), Shoot'em Up Construction Kit, Army Days, Typing Tutor

All for £149.99!

IF YOU LIKE TO RUN
YOUR OWN FRANCHISE
PLEASE WRITE TO:

ACE

COMPUTERS

No. 30, Cannon St,
Bedminster, Bristol

PRICES INCLUDE VAT AND NEXT DAY FREE DELIVERY

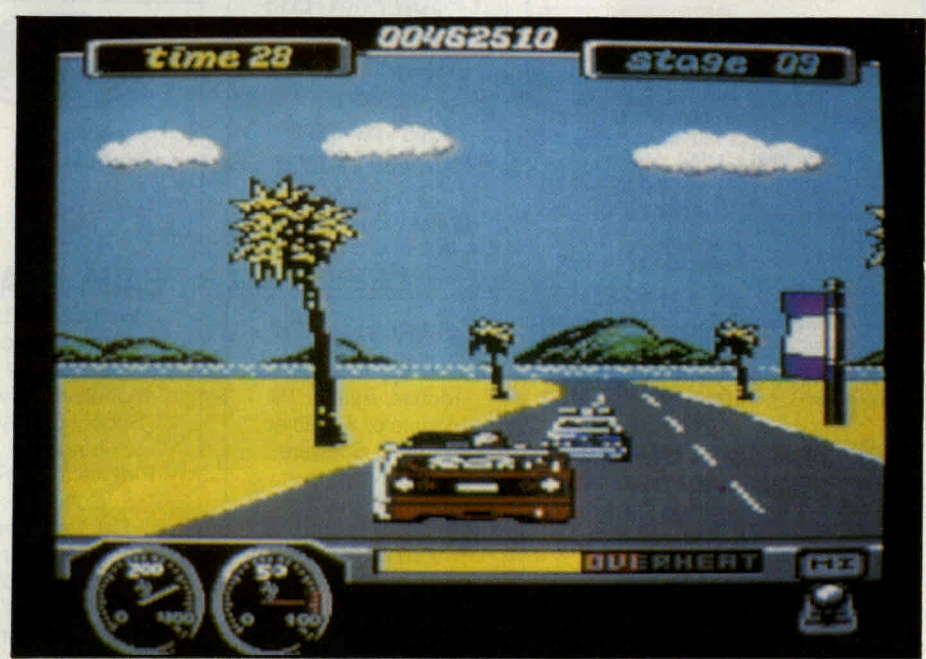
Turbo Outrun

US Gold

Will the games-buying public forgive and forget the mess US Gold made of the 8-bit Outrun conversions two years ago? US Gold are banking on it, but you'll be pleased to hear they've made a stronger effort this time round. A new team was given

"The highly criticised stripey road has gone, replaced by a far neater, smoother-running alternative; smooth that is, until you start weaving between the traffic."

years ago? US Gold are banking on it, but you'll be pleased to hear they've made a stronger effort this time round. A new team was given



the job of the 64 conversion, and first impressions are far better.

Compared to Chase HQ or Power Drift, Turbo Outrun has very few new features. In theory, you're driving your Ferrari F40 from the East to West coast of America, in a race against a Porsche. In reality, the game is almost identical to Outrun, with the addition of a turbo feature, and the omission of the forking road. The highly criticised stripey road has gone, replaced by a far neater, smoother-running alternative; smooth that is, until you start weaving between the traffic. The effect is spoilt as the road jerks in large steps across the screen, without a change in perspective. Brightly coloured office blocks, trees and billboards shoot past on



the roadside. I'd like to be able to say they move smoothly, but they're no better animated than those of the original Outrun. Similarly, the other cars on the road drive along in noticeably large steps.

There are occasional breaks and variations in the rather plain gameplay. You'll encounter a



variety of weather conditions (rain, snow and sandstorms), although they seem not to affect the handling of the car. Driving over a log on the road will launch you into the air for a second, and colliding with awkward barriers slows you down. There's an opportunity to soup up your car at points through the game, from a choice of hi-grip tyres, a more powerful engine, or a turbo extension. Hills



have also been included, but are small, unrealistic, and not a patch on those of Power Drift. Although the graphics are poorly animated, on the whole they're well drawn, and some of the objects are pretty

"Working dials have been placed in the bottom border to free more space for the game."

big close up. Working dials have been placed in the bottom border to free more space for the game. The course map is superbly created in colourful cartoon style, as

are the rest of the still screens.

The few sound effects are nothing special, and the twee in-game music is less than entertaining. A lot of effort has been put into the inclusion of the coin-op's presentation screens. Some are accompanied by digitised music, but the coarse quality of the samples is disappointing. They are good considering the 64's limited sampling facilities, but I'd rather hear clearer SID-generated sounds.

For all its flash presentation, Turbo Outrun is still a simple, rather jerky 3D racer. I'm informed by Probe that Turbo has a higher frame-update rate than Power Drift, but it's still not nearly as smooth and gives an inferior impression of speed. The jerky

movement is not just a cosmetic imperfection, as it allows far less accuracy when dodging the obstructions. It's not the complete disaster its predecessor was, and I can't deny it looks great in still screenshots, but out of the two, Power Drift gets my vote by a long shot.

T.H.

Graphics: 74%
Sound: 65%
Playability: 62%
Overall: 63%
Price: £9.99 (cass)
£14.99 (disk)

Tusker

System 3

Your father, and many before him, dedicated their lives to the search for the fabled elephant's graveyard. Apart from a fortune in Swahili phrase books, it also cost your father his life. When they found his corpse, floating down the Turkwel river skewered between a couple of tomatoes, in a fit of insanity you decided to pick up the trail.

"A sharp kick in the gristlies is enough to reduce them to a pile of bones."

After a quick rummage through your dad's trunk, you kit yourself out in pith helmet and safari suit. Before you know it, you're standing in the Sahara desert surrounded by irate arabs. Bearing an uncanny resemblance to the sprite from Predator, you set about your business at a leisurely jog. The sandy flip-screens are inhabited by a number of charac-



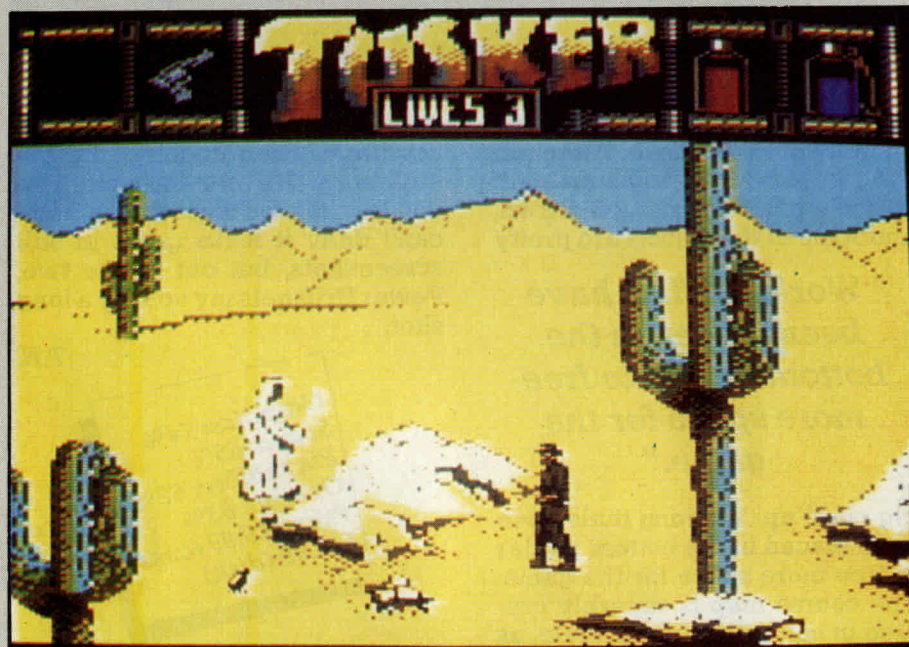
ters, all of whom are hostile. You came unarmed, so your only initial defences are a high kick and a couple punches you picked up from a documentary on Thai Boxing. Luckily for you, the arabs are far from skilled with their sabres. A sharp kick in the gristlies is

enough to reduce them to a pile of bones. Grab hold of a knife, and you can take them out from a safe distance. The knife also has a second use. Water is in very short supply, and at the rate a sweaty explorer gets through it, your canteen will be empty in minutes. Fortunately you can get a top-up by piercing one of the large juicy cacti (evidently not of the poisonous variety and of course they make tequila from them). Although strangely enough, it

"The puzzles are actually rather straight forward, and involve giving the right things to the right people, unlocking doors and the like."

seems impossible to refill your canteen from the deep pool in the cave.

A guide to the first level is included in the instructions, which helps set you on the right



train of thought for the rest of the game. Sadly the rest of the instructions are not so helpful. They explain how to pick up objects, cycle through the inventory and use weapons, but are very misleading when it comes to the use of objects. It implies that the "pick up" control doubles as a general "use" function. Occasionally, this is the case, but often it's not. The instructions tell you that punching, with the

sure what you've just picked up, or what that wobbly brown thing is, working out a logical solution to the vague problem is a matter of trial and error. A couple of times, the solution to the problem in hand only became apparent after poking various objects at an assortment of background features. The puzzles are actually rather straight forward, and involve giving the right things to the right

psuedo 3D) layout, but the design of the graphics is far below TLN. Some of the larger monsters are impressive, but many of the backgrounds are messily drawn and coloured. There are no sound effects; instead each level has its



appropriate object selected, will use it, but it says this only applies to one of the many problems in the game. In fact, the punch very often doubles as a "give" command, but that's left for you to find out.

Solving the puzzles is made even more awkward by the unclear graphics. When you're not

people, unlocking doors and the like. Any of the less logical problems are so clichéd that they're immediately obvious.

Tusker is very much like The Last Ninja, without the isometric view. It loses nothing from the more conventional (but still

own music score, all of which are satisfactory without creating much of an atmosphere. With only weak beat 'em up action to create the arcade element, Tusker is not gripping. Either you'll work your way through the puzzles and levels fairly quickly, in which case you'll be unlikely to come back to it once you've finished it, or else you'll spend longer mincing around each level, getting bored and frustrated working out what to do, whilst being harassed by persistent enemies. Worth a playtest if you liked either Last Ninja I or II, but Tusker's just not in the same league.

T.H.

Graphics: 65%
Sound: 78%
Playability: 60%
Overall: 62%
Price: £9.99 (cass)
£14.99 (disk)

With no predators other than man, an elephant's life expectancy is governed by its teeth. The lucky ones, who escape the hunter's rifle, will live as long as they have teeth. Once their last pair have fallen out, chewing food is impossible, and soon after they'll find themselves at the watering hole of the big game reserve in the sky. It's said that these wizened beasts make their way to a secret elephant's graveyard, where they finally throw in the towel, and this promise of immense quantities of ivory is too much for many an unscrupulous adventurer to resist.

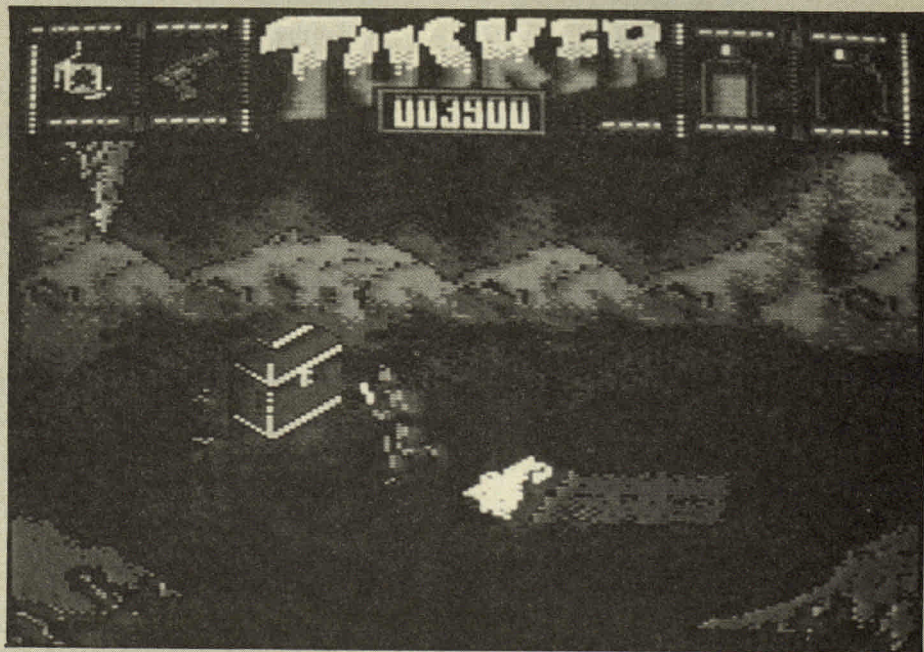


CHART SHATTERING EVENTS!

So as we predicted, the Batmobile screeched up to the Big Number One. How could it not with all that hype and every unhip preteen sporting the T-shirt? O.T.T. the whole thing may have been (the Joker gets Jack Nicolson the Oskar for HAM of the year!) but the game wasn't bad anyway, certainly worth the pre-Xmas Top Spot. Old Budgeteers Virgin-owned Mastertronic reach an unexpected level with Continental Circus, the highest new entry at Two and have Shinobi at Four. But, as is to be expected, powering up the Chart comes Powerdrift from Activision (though there are some odd rumours that company starting to speak with a French accent!). U.S.G's hottest just now is Strider, goodlooking and good to play. Bubbling under ees anoizzer Hactiveesieon jeu le nastee-titled Altered Beast. Attention le next chart for Zat one!

In the Amiga line up Imageworks volcanic Xenon II (the Megablast to you) clutches the Numero Uno firmly. Those Bitmap Brothers really swing their coding wands, don't they? But there again the Black Caped Crusader comes flying in after the Amiga in the bronze medal spot. Psygnosis megabucks production (£34.99!) Shadow of the Beast looms in the top Five in spite of its price (T-shirt and all). But watch out for Powerdrift on the 16 Bit Map too.

The almost last group of the eighties budget sees one of the best of the decade, Wizball take the honours with newest entry Hypersports hitting Three. And Monty is back. The old Gremlin favourite has K-xxed his way to stardom once more at Five. You can't keep the real stars down can you?

Z.M.S.

(C64) GAME TITLE	COMPANY	LAST MONTH	RATING	PRICE
1. Batman - The Movie	Ocean	(10)	70%	£9.99
2. Continental Circus	Virgin	(-)	50%	£9.99
3. New Zealand Story	Ocean	(1)	88%	£9.99
4. Shinobi	Virgin	(4)	76%	£9.99
5. Indiana Jones	U.S. Gold	(2)	69%	£9.99
6. Powerdrift	Activision	(-)	87%	£9.99
7. Kick Off	Anco	(5)	31%	£9.99
8. Rick Dangerous	Microprose	(3)	90%	£9.99
9. Strider	U.S. Gold	(-)	TBA	£9.99
10. 3D Pool	Firebird	(7)	80%	£9.99
(AMIGA) GAME TITLE				
1. Xenon II	Imageworks	(-)	90%	£19.95
2. Populous New Worlds	Electronic Arts	(5)	80%	£9.99
3. Batman - The Movie	Ocean	(-)	78%	£24.99
4. Shadow of the Beast	Psygnosis	(-)	80%	£34.99
5. RVF Honda	Microstyle	(2)	80%	£24.95
(BUDGET) GAME TITLE				
1. Wizball	Hit Squad	(5)		£2.99
2. Pitstop II	Kibx	(1)		£2.99
3. Hypersports	Hit Squad	(-)		£2.99
4. Rally Cross Sim.	Codemasters	(-)		£2.99
5. Monty on the Run	Kibx	(-)		£2.99

MicroBotics means Amiga™-Power!

Whichever Amiga you own—or plan to buy—we have the expansion you need

For the
Amiga 2000...

HardFrame/2000
DMA SCSI Interface

If your application calls for super-speed uninterrupted access to your hard disk, HardFrame/2000 is your answer. This is a high end, no holds barred SCSI interface that operates at bus speeds. One HardFrame/2000 can support up to seven devices. Word-length data transfer, FIFO buffering, TRUE DMA, mounted on a metal frame suitable for all standard 3.5" SCSI drives (or, if you prefer, connected to a bay mounted or external disk). Available now.

Suggested Price: PLEASE PHONE

8-UP! FastRAM

Maximum Memory in One Slot!

The FastRAM card that every Amiga owner will eventually come to - why limit yourself to only two megabytes per slot? 8-UP! will take you all the way to the top of the auto-configuration memory space of EIGHT MEGABYTES! 8-UP! is available in two versions, the standard DIP model accepts 2,4,6 or 8 megabytes of 1 meg DRAMS. For maximum flexibility there is the SIMM version which lets you custom configure with mixed 256k and 1 meg SIMM modules, including MicroBotics exclusive PopSIMMs. 8-UP! is a power-efficient, zero wait state, autoconfiguring design. "The latest and greatest" (Amiga World, Jan. 1989). 8-UP! is available now.

Suggested Price: PLEASE PHONE

MouseTime

The easiest to use, most cost-effective implementation of a battery backed clock for the A1000. Passes the port through for joysticks or other devices. Complete with WorkBench software. Available now.

Suggested Price: PLEASE PHONE

For the
Amiga 500...

M501 Memory + Clock
Half a Meg at a Great Price!

As we are all coming to realise, a one megabyte Amiga (at least) is a necessity not an option. When you add the inboard 512k memory and clock module to your A500 make sure it's a MicroBotics M501. Note that just like the Commodore and unlike some third party expansions, we use a long lived rechargeable NiCad battery-which you'll never have to replace. Set the MicroBotics clock using the same WorkBench software as you would use for the Commodore clock. What's the difference? You get to keep £25 compared to the Commodore version. The M501 is available now.

Suggested Price: PLEASE PHONE

StarBoard2/500

Two Megs PLUS a Choice of Modules.

The premier memory expansion for the A1000 is now available on the A500. In its own case with an independent power supply strong enough to handle StarBoard2 and a second A1000 style StarBoard2, all the power and flexibility of this great expansion device is available to you. Up to 2 megabytes of autoconfiguring, zero wait state FastRAM, MultiFunction or SCSI module capability for math chip or fast SCSI hard disk interfacing. StarBoard2 also has an LED diagnostic/confidence light to indicate the power-up state of your Amiga and expansion. An A1000 style StarBoard2 can be connected to the bus pass-up for a total of FOUR megs and two modules. "The best ..." (Amiga World, Jan. 88).

Suggested Price: PLEASE PHONE

For the
Amiga 1000...

StarBoard2
The Expansion of Choice

The superb memory expansion for the Amiga 1000, still going strong! Up to 2 megabytes of autoconfiguring, zero wait state, FastRAM in a sleek, all steel Amiga coloured case plus the capability to accept either of the two daughterboard modules, the original Multi-Function Module or the new SCSI Module. StarBoard2 is powered by the bus (up to two StarBoard2's can be supported by the A1000) and passes it on.

Suggested Price: PLEASE PHONE

MultiFunction Module

High Tech at Low Cost

This daughterboard installs on any StarBoard2. It features a socket and software for the 68881 Math Chip as an I/O device (MicroBotics pioneered this approach on the Amiga-now directly supported in the maths libraries of AmigaDOS 1.3). StickyDisk gives you the most "bullet-proof" rebootable RAM disk - its hardware protection turns it into a solid state, superfast disk. Parity checking of StarBoard2 RAM can be enabled when extra parity ram is installed. Finally, the MultiFunction Module carries an easy to use battery-backed clock to set the system time on startup.

Suggested Price: PLEASE PHONE

StarDrive SCSI Module

Fast, Low Cost SCSI Module

When installed in any model StarBoard2, StarDrive offers you cost effective, pseudo-DMA access to SCSI hard drives and other devices. Fast, easy to install including driver software and disk diagnostics. StarDrive also includes a battery backed clock to set system time on startup.

Suggested Price: PLEASE PHONE



MicroBotics, Inc.

OASIS

Tell your dealer he can order direct - no minimum quantity - show him this ad!

In Europe: Oasis Services Ltd., 17 Andrews Place, London SE9 2SJ. TEL: (01) 859 4936

In U.S.A.: MicroBotics, Inc., 8111 Alpha Drive, Richardson TX 75081. TEL: (214) 437 5330

XENON TECHNOLOGY

71, Wadham Road, North End, Portsmouth, Hampshire, PO2 9ED

MEGA '45' PRICES!

Amiga

MEGA '45' PRICES!

MAIL ORDER

(0705) 670878

MAIL ORDER

COMMODORE 64 SOFTWARE

	Disk	Tape
Continental Circus	(Virgin) £9.45	£6.35
Shinobi	(Virgin) £9.45	£6.45
Dynamite Dux	(Activision) £9.45	£6.45
Bomber	(Activision) £9.45	£6.45
Cabal	(Ocean) £9.45	£6.35
100% Dynamite	(Ocean) £12.85	£9.45
Batman: The Movie	(Ocean) £9.45	£6.45
Laser Squad	(Blade) £9.45	£6.45
Beach Volley	(Ocean) £9.45	£6.45
Dragon Spirit	(Domark) £8.45	£6.45
Powerdrift	(Activision) £9.45	£6.45
Galdregons Domain	(Pandora) £9.45	£6.45
Quarterback	(Virgin) £9.45	£6.45
Stunt Car	(Micro Style) £13.45	£9.45
Super Quintet	(Infogrames) £9.45	£6.45
Super Wonder Boy	(Activision) £9.45	£6.45
Eye of Horus	(Logotron) £9.45	£6.45
Rainbow Island	(Firebird) £9.45	£6.45
Operation Neptune	(Infogrames) £9.45	£6.45
Weird Dreams	(Rainbird) £9.45	£6.45
Paul Gascoigne Super Soccer	(Empire) £9.45	£6.45
F.1. Manager	(Sumulondo) £9.45	£6.45
Action Fighter	(Firebird) £9.45	£6.45
Gemini Wing	(Virgin) £9.45	£6.45
Robocop	(Ocean) £9.45	£6.45
Vigilante	(US Gold) £9.45	£6.45
Battlechess	(Interplay) £9.45	—
Rick Dangerous	(Firebird) £9.45	£6.45
Graham Gooch All Star Cricket	(Audiogenic) —	£6.45
Indiana Jones & The Last Crusade	(Lucasfilm) £9.45	£6.15
The New Zealand Story	(Ocean) £9.45	£6.45
The Tolkien Trilogy	(Beau Jolly) £12.45	£8.45
Xenophobe	(Micro Style) £9.45	£6.45
A.P.B.	(Tengen) £8.45	£6.45
Captain Fizz	(Psygnosis) £8.45	£6.45
Citadel	(Electric Dreams) £9.45	£6.45
Leonardo	(Starbyte) £9.45	£6.45
Heat Wave	(Newson) £12.45	£8.45
Ringside	(E.A.S.) £9.45	—
Rainbow Warrior	(Micro Style) £9.45	£6.45
Kayden Garth	(E.A.S.) £9.45	£6.45
Chessmaster 2000	(Mindscape) £9.45	—
Fire Power	(Micro Illusions) £9.45	£6.45
Ghostbusters II	(Activision) £9.45	£6.45
Thunderbirds	(Grandslam Entertainment) £9.45	£8.45
Black Magic	(E.A.S.) £9.45	£6.45
Kings Of The Beach	(Electronic Arts) £9.45	—
Heavy Metal	(US Gold) £9.45	£6.45
Moonwalker	(US Gold) £9.45	£6.45
Tusker	(System 3) £9.45	£6.45

COMMODORE 64 HARDWARE

Power Cartridge	£13.45
Fast Load Cartridge	£22.45

COMMODORE AMIGA SOFTWARE

Drivin Force	(Digital Magic) £15.85
Toobin	(Domark) £15.85
Super Wonderboy	(Activision) £15.85
The Untouchables	(Ocean) £16.35
Xenomorph	(Pandora) £16.35
Bloodwych	(Image Works) £16.45
Cabal	(Ocean) £14.95
Xenon II Megablast	(Image Works) £12.75
Batman: The Movie	(Ocean) £14.95
Galaxy Force	(Activision) £16.45
Interphase	(Image Works) £16.45
Operation Thunderbolt	(Ocean) £16.45
The Lost Patrol	(Ocean) £15.75
Continental Circus	(Virgin) £13.45
Fiendish Freddie's Big Top O' Fun	(Mindscape) £16.45
Beach Volley	(Psygnosis) £15.75
Populous: The Promised Lands	(Electronic Arts) £ 6.45
Gemini Wing	(Virgin) £12.75
Future Wars	(Delphine/Palace) £15.75
Powerdrift	(Activision) £16.25
Gridiron	(Bethesda) £16.45
Damocles	(Novagen) £16.45
The New Zealand Story	(Ocean) £15.75
Ghostbusters II	(Activision) £16.45
Infestation	(Psygnosis) £16.45
Iron Tracker	(Infogrames) £12.75
A.P.B.	(Tengen) £12.75
Barbarian II	(Psygnosis) £15.75
Dragon Spirit	(Domark) £12.75
Quartz	(Firebird) £16.45
Ivanhoe	(Ocean) £15.75
Demon's Tomb	(Melbourne House) £12.75
Never Mind	(Psychapse) £13.45
Bad Company	(Logotron) £16.45
Highway Patrol	(Infogrames) £15.75
Space Quest III	(Sierra) £16.45
Strider	(US Gold) £16.75
Xenophobe	(Micro Style) £16.45
Shadow Of The Beast	(Psygnosis) £24.45
Laser Squad	(Blade) £13.45
Star Blaze	(Logotron) £13.45
Knightforce	(Titus) £16.45
Bloodywych Data Disk	(Image Works) £10.45
Horse Racing	(Mindscape) £16.45
Chicago 90	(Infogrames) £13.45
Life & Death	(Mindscape) £16.45
Keef The Thief	(Electronic Arts) £16.45
Neuromancer	(Electronic Arts/Interplay) £16.45
Sim City	(Infogrames) £23.45
Pictionary	(Domark) £16.45

COMMODORE AMIGA HARDWARE

Commodore A590 20MB Hard Drive	£348.95
Commodore A590 CMOS RAM Chips x1 (128k)	£13.95
Commodore A590 CMOS RAM Chips x4 (512k/0.5MB)	£48.95
Commodore A590 CMOS RAM Chips x8 (1024k/1MB)	£98.95
Commodore A590 CMOS RAM Chips x12 (1536k/1.5MB)	£148.95
Commodore A590 CMOS RAM Chips x16 (2048k/2MB)	£198.95
External Floppy Disk Drive	£68.95
Cardless Mouse	£117.95
Commodore A501 512k/0.5MB RAM Expansion for A500	£109.95
Minigen	£99.95
Commodore A520 Modulator	£22.95
Commodore MPS 1200S Serial Printer	£159.95

ATHD-20 Bundle:

Commodore Amiga B2000 (Latest Version)	
1MB RAM	
Commodore 1084P Monitor	
20MB Autoboot Amiga Hard Drive & Controller	
AT (80286) Bridgeboard with 1MB RAM	
Superbase Personal	£2395.95

ATHD-40 Bundle:

Same as ATHD-20 but with 40MB Hard Disk	£2595.95
---	----------

COMMODORE AMIGA PERIPHERALS

Konix Navigator Joystick (Auto Fire)	£8.99
Sureshot Zipstick (Auto Fire)	£12.95
Konix Speedking (Auto Fire)	£8.99
Mouse Mat	£3.35
Dust Cover	£3.35
10 x 3.5" Floppy Disks inc labels	£6.50
VIDI-Amiga	£79.95
VIDI-Amiga PAL	£94.95

Xenon Technology, 71 Wadham Road, North End, Portsmouth, Hampshire PO29 9ED. Telephone: (0705) 670878.

Special Offers!?! Any less and we'll be giving them away. "And why not?!" I hear you ask? Because we're not as silly as the competition looks!! What competition? With Xenon Technology there is no competition!

- > xenon (zen' , zen'on) a zero-valent element (Xe; atomic number 54), a heavy gas present in the atmosphere in proportion of 1:17x10E7 by volume.
- > technology (tek'n-o-lo'ji) the practice of any or all of the applied sciences that have practical value and/or industrial use: technical method(s) in a particular field of industry.
- > xenon technology (zen'on tek'n-o-l-o'ji) the best definition!

All products are dispatched within 24 hours (subject to availability) by FIRST CLASS post. All new titles are dispatched when released. All prices shown are fully inclusive of VAT, postage, packaging and a full guarantee (please add £1.35 per item overseas). Please make cheques or postal orders payable to "Xenon Technology". For a full catalogue send an S.A.E.

To order simply write on a piece of paper, your name, postal address, a telephone number (if possible, only used when absolutely necessary), and the software title (with the machine model). Then put in your payment (either a cheque or a postal order) and then pop it in the post (not forgetting of course our name on the front of the envelope and a stamp).

VAT Registration Number: 543 9020 57

Proprietor: Steve Lowe

Note: Xenon Technology is Mail Order Only.

Did you ever imagine loading your C64 on C.D.



C.D. EDITION

10 Classic Games on C.D. for the Commodore 64.

DAVID'S MIDNIGHT MAGIC from Broderbund.

LEADERBOARD GOLF from Access.

MISSION ELEVATOR from Softgold.

IMPOSSIBLE MISSION from Epyx.

DROPZONE from U.S. Gold.

LODERUNNER from Broderbund.

SOLOMON'S KEY from U.S. Gold.

JINKS from Rainbow Arts.

M.U.L.E. from Electronic Arts.

FIST II from Melbourne House.

+ 5 PIECES OF MUSIC

from Chris Hülsbeck.

Suitable for every CBM 64
and normal C.D. players.
Adapter Included.

£29.99



Rainbow Arts

ENTERTAINMENT AT THE SPEED OF LIGHT

Rainbow Arts (U.K.) Ltd., 6 Sketty Close, Brackmills Business Park, Northampton NN4 0PL.

Retrograde

Thalamus



Original shoot 'em ups are extremely rare. Many attempts to produce a shoot 'em up with depth, and new ideas, result in a game based on an old design, with awkward bolt-on extras (take Morpheus for example). Retrograde is one of the few games to get the balance right, including a wide variety of features and weapons, but keeping the emphasis firmly on the action.

Retrograde is a little more complex than your average zapper. Your object is to destroy seven planets. Rather than flying along a tunnel before blowing up a big alien, this time your technique comprises three distinct stages: alien annihilation and consequent cash collection above the planet surface, the journey to the planet's core, and the destruction of the enormous guardian.

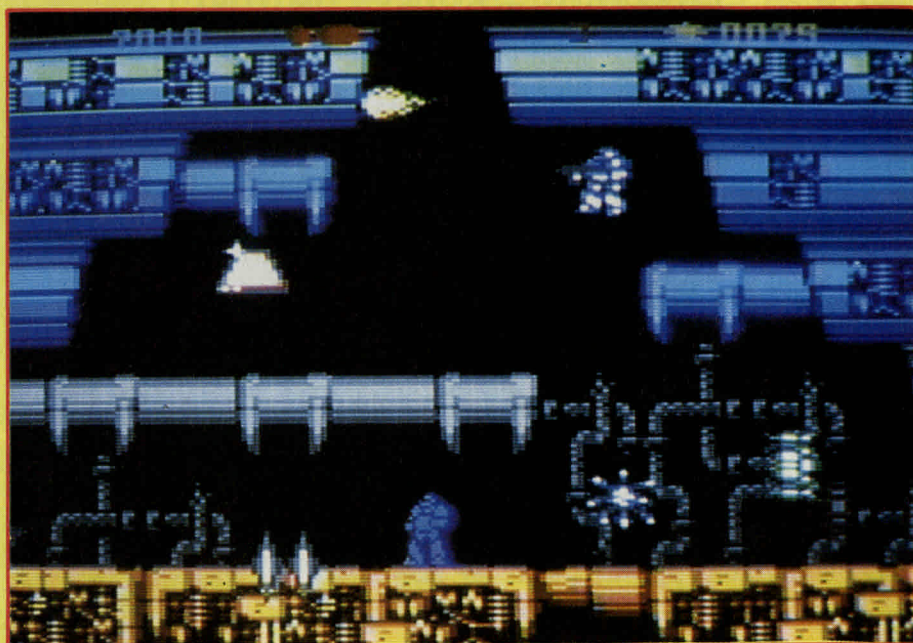
It all begins in familiar fashion above that horizontally scrolling planet surface. You may be kitted out in a shiny new suit of armour, with a snug pair of hover boots, but your basic arsenal is not up to much. Your first priority then, is to get yourself a decent shooter.

Blasting the semi-random attack waves of aliens will reveal cash crystals. Scoop them up before they fade away, take them to the shop and you can start upgrading your firepower. Of a total of twelve weapons, only two are available during the first level, the power of which can be increased a

number of times. Around your armour are sixteen weapons ports. When you buy a new weapon, you get to choose which port to plug it in to, determining the direction of fire. Alternatively, you could spend your cash on upgrading the power of any established weapons. As you progress through the levels, more of the weapons are made available, and, as you never lose any weapons (unless you sell them), you'll gradually build up some immense firepower.

"Turning off your hover boots, you touch down on the surface. Now your lasers are replaced by your fist."

That's all well and good, but so far it hasn't got you any nearer to blowing up the planet. Once you've amassed a suitable range of weapons, you can start saving towards the 500 credits it costs for a detonator. Before you can buy one though, you need to find the explosives, which are held by the



aliens down on the ground. Turning off your hover boots, you touch down on the surface. Now your lasers are replaced by your fist. Find and beat up the right alien, and you'll be rewarded with the explosives. It's then back to the shop to buy the detonator.

One of the ducts leading to the core will now be open. On foot

"Loads of colourful sprites fill the screen, parallax scrolling is in abundance, and it all moves perfectly smoothly at a very high speed."

once more, you make your way down the alien-ridden shaft. As you hop from one platform to the next, some aliens are best avoided, whilst the impassable nasties must be punched into submission. At the bottom of each shaft is a guardian, the killing of which plants the charge. Level one has a couple of these ducts to be penetrated, but the number increases with each level.

With all that done, all that remains is to sort out the big planet guardian. Unlike most, those of Retrograde really are massive. The first ties in with the hi-tech style of the first level, looking like something from Armalyte. More stunning is the gruesome second level guardian, a fish and a frog



joined together like siamese twins. If you forget to tool up with a vertically-firing laser before you meet this slimeball, you've had it.

Programmers Apex have not shied away from a multi-load format, but don't let that put you off. Rather than simply loading in a new level layout, the program goes all out for variety. Each level, apart from a new layout, has a completely different theme, new aliens, new weapons, more of the platform stages, and a whole new level guardian.

Technically, Retrograde is one of the most advanced games ever seen on the 64. Just about every trick in the book has been used to

excellent effect. Loads of colourful sprites fill the screen, parallax scrolling is in abundance, and it all moves perfectly smoothly at a very high speed. There's also a decent set of sound effects, along with range of funky tunelets.

Retrograde could have easily been spoilt by over-design. Fortunately, the Apex team have not

"Retrograde is by far the best thing to appear for the 64 recently."

run away with themselves, developing the gameplay above simple blasting, without presenting the trigger-happy player with reams of stats and a fragmented gameplan. The size, variety and consequent lasting appeal of the game more than justifies the multi-load. Surprisingly original for a zapper, superbly presented, and very playable, Retrograde is by far the best thing to appear for the 64 recently, and rates as one of the finest ever 64 shoot 'em ups.

T.H.



Graphics: 93%
Sound: 88%
Playability: 91%
Overall: 92%
Price: £9.95 (cass)
£14.95 (disk)

...it's dynamite!

POWER CARTRIDGE

FOR YOUR COMMODORE

64/128

SO MUCH FOR SO LITTLE

- * POWER TOOLKIT
- * POWER MONITOR
- * TAPE & DISK TURBO
- * PRINTERTOOL
- * POWER RESET
- * TOTAL BACKUP

TRIED AND TESTED
— OVER 100,000 SOLD IN EUROPE

AVAILABLE FROM ALL GOOD COMPUTER RETAILERS

TRADE AND EXPORT ENQUIRIES WELCOME

YOU WILL WONDER HOW YOU EVER MANAGED WITHOUT IT

16 K OUTSIDE operating system



POWER RESET



On the back of the POWER CARTRIDGE there is a Reset Button. Pressing this button makes a SPECIAL MENU appear on the screen. This function will work with any programme.

- CONTINUE - Allows you to return to your program.
- BASIC - Return to BASIC.
- RESET - Normal RESET.
- TOTAL - Saves the contents of the memory onto a Disk. The program can be reloaded later with BLOAD followed by CONTINUE.
- BACKUP - RESET of any program.
- DISK - As BACKUP DISK but to TAPE.
- RESET ALL - As BACKUP DISK but to TAPE.
- TOTAL - As BACKUP DISK but to TAPE.
- BACKUP - At any moment, prints out a Hardcopy of the screen. Using CONTINUE afterwards you can return to the program.
- MONITOR - Takes you into the Machine language Monitor.

POWER TOOLKIT

A powerful BASIC-Toolkit (Additional helpful commands) that considerably simplifies programming and debugging.

AUTO	HARDCAT	RENUMBER
AUDIO	HARDCOPY	REPEAT
COLOR	HEX\$	SAFE
DEEK	INFO	TRACE
DELETE	KEY	UNNEW
DOKE	PAUSE	QUIT
DUMP	PLIST	MONITOR
FIND	ILOAD	BLOAD

RENUMBER : Also modifies all the GOTO's GOSUB's etc. Allows part of a program to be renumbered or displaced.

PSET : Set up of printer type.
HARDCAT : Prints out Directory.

The toolkit commands can be used in your programs.

DISK TOOL

Using POWER CARTRIDGE you can load up to 6 times faster from disk. The Disk commands can be used in your own programs.

DLOAD	DVERIFY	DIR
DSAVE	MERGE	DEVICE
DISK		

MERGE : Two BASIC programs can be merged into one.

DISK : With DISK you can send commands directly to your disk.

TAPE TOOL

Using POWER CARTRIDGE you can work up to 10 times faster with your data recorder. The Tape commands can be used in your own programs.

LOAD	SAVE	VERIFY
MERGE	AUDIO	

POWERMON

A powerful machine language monitor that is readily available and leaves all of your Commodore memory available for programming. Also works in BASIC-ROM, KERNAL and I/O areas.

A ASSEMBLE	I INTERPRET	S SAVE
C COMPARE	J JUMP	T TRANSFER
D DIS-	L LOAD	V VERIFY
ASSEMBLE	M MEMORY	W WALK
F FILL	P PRINT	X EXIT
G GO	R REGISTER	\$ DIRECTORY
H HUNT		DOS Commands

PRINTERTOOL

The POWER CARTRIDGE contains a very effective Printer-Interface, that self detects if a printer is connected to the Serial Bus or User-Port. It will print all Commodore characters on Epson and compatible printers. The printer-interface has a variety of set-up possibilities. It can produce HARDCOPY of screens not only on Serial

printers (MPS801, 802, 803 etc) but also on Centronic printers (EPSON, STAR, CITIZEN, PANASONIC, etc). The HARDCOPY function automatically distinguishes between HIRE\$ and LORES. Multi-colour graphics are converted into shades of grey. The PSET functions allow you to decide on Large/Small and Normal/Inverse printing. The printer PSET functions are:

PSET 0 - Self detection Serial/Centronics.
PSET 1 - EPSON mode only.
PSET 2 - SMITH-CORONA mode only.
PSET 3 - Turns the printing 90 degrees!!
PSET 4 - HARDCOPY setting for MPS802/1526.

PSET B - Bit-image mode.
PSET C - Setting Lower/Upper case and sending Control Codes.
PSET T - All characters are printed in an unmodified state.
PSET U - Runs a Serial printer and leaves the User-port available.
PSET 5x - Sets the Secondary address for HARDCOPY with Serial Bus.
PSET L1 - Adds a line-feed, CHR\$(10), after every line.
PSET L0 - Switches PSET L1 off.

Bit con Devices Ltd does not authorise or purport to authorise the making by any means or for any purpose whatsoever of copies or adaptations of copyright works or other protected material, and users of the Power Cartridge must obtain the necessary prior consent for the making of such copies or adaptations from all copyright and other right owners concerned. See UK Copyright, Designs & Patents Act 1988.

BDL

Bitcon Devices Ltd

88 BEWICK ROAD
GATESHEAD
TYNE AND WEAR
NE8 1RS
ENGLAND

Tel: 091 490 1975 and 091 490 1919 Fax 091 490 1918
To order: Access/Visa welcome - Cheques or P/O payable to BDL
Price: £14.99 incl. VAT.
UK orders add £1.20 post/pack total - £16.19 incl. VAT

Europe orders add £2.00. Overseas add £3.50

Scandinavian Mail Order and Trade enquiries to: Bhiab Elektronik, Box 216, Norrtalje 76123, SWEDEN. Tel: ++46 176 18425 Fax: 176 18401

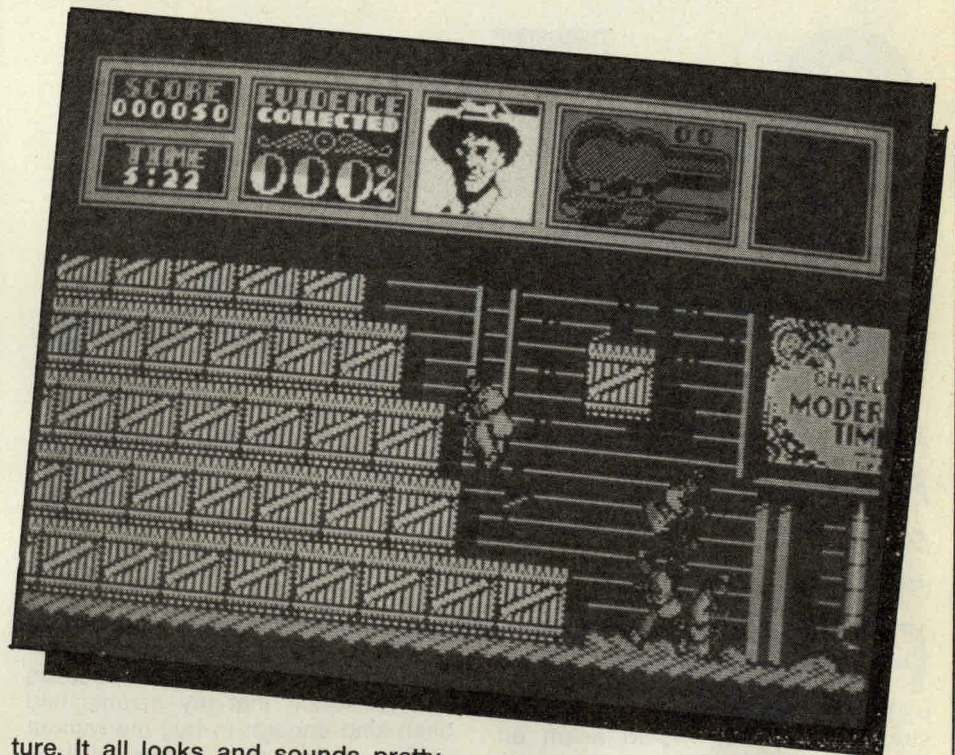
Hot from their special release at the Commodore Show, Tony Horgan came panting back with a couple of goodies clenched in his sweaty palm ...

The Untouchables

With Batman at number one in the charts, Ocean have just released their follow up film tie-in, *The Untouchables*. It arrived just too late for a full review this issue, but here is a taste of what it's all about.

You probably remember from our Ocean profile in the November issue (did you notice the deliberate mistake that Ness is a character in the movie, not the star!), that the game follows the plot of the film, concentrating on six of the most spectacular scenes. The story of prohibition, cops and gangsters, begins with a raid on a warehouse, which is being used to run Capone's illegal liquor business. It turns out that some of the bookkeepers are there, who hold evidence of Capone's underground dealings. Leaping around the stacks of crates in the spacious warehouse, you have to deal with the small time gangsters. Whilst tracking the bookkeepers. Collects enough evidence and it's on to scene two.

As the following five levels are all based on different scenes, each has its own unique look and game struc-



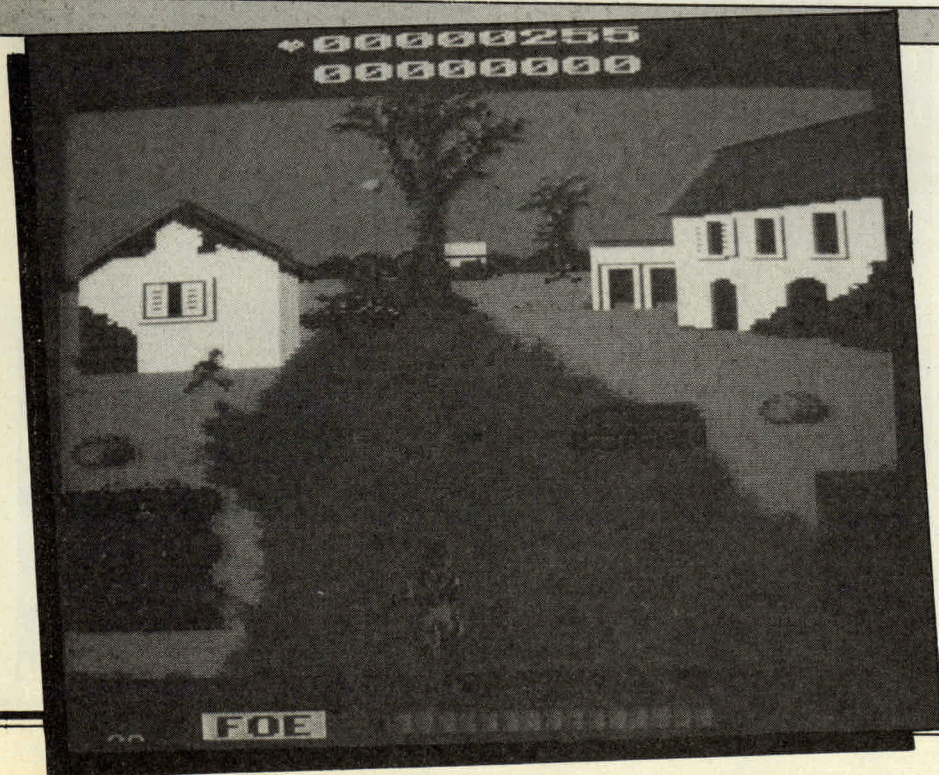
ture. It all looks and sounds pretty classy, and I'll bet it plays just as well. All the same, best wait for the review next issue.

Cabal

It's been dismissed as an average Operation Wolf clone in the arcades, but a couple of games of the 64 version were enough to convince us that Ocean have done a great job of the conversion. A one or simultaneous two-player game, *Cabal* is very much like Ocean's number one of last Christmas, but instead of a first person viewpoint, you get to see both players at the bottom of the screen.

In typical coin-op style, the gameplay is extremely easy to pick up. Armed with a machine gun and hand grenades, you guide a sight around the screen, bombing and shooting everything in sight. That includes soldiers, tanks, and even the buildings and arms dumps. Plenty of noisy chaos insures a palm sweatiar than a buffalo's armpit. More details in the full review next month.

T.H.



So You Want To Go To College...

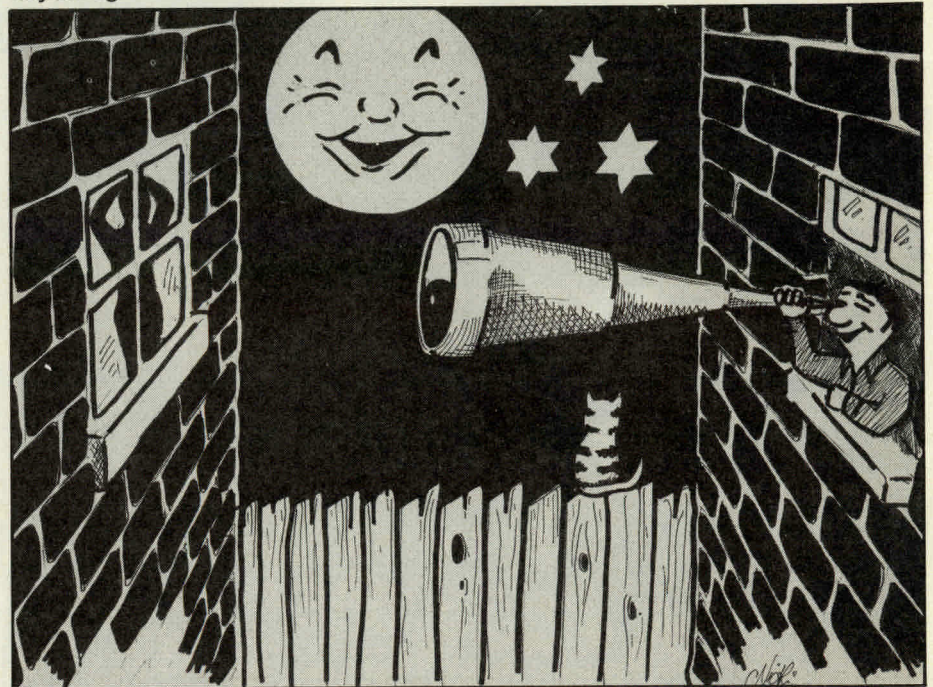
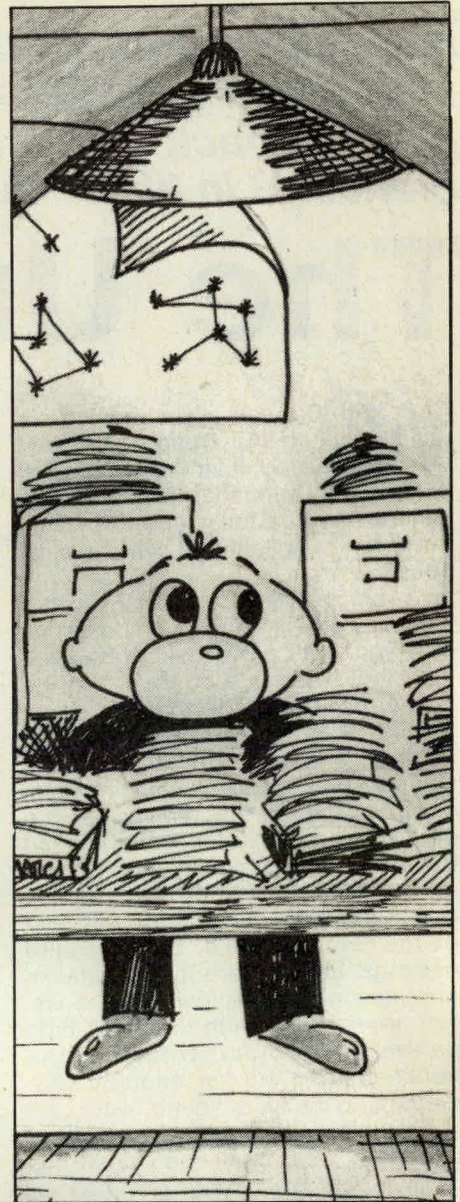
How do you become a writer on computing? Peter Gerrard offers a personal memoir that suggests you could start by studying astronomy...

Plenty of CCI people must be in the position of deciding which college to go to in the distant, or perhaps not so distant, future. What to study? Computing would seem an obvious choice, but I chose astronomy, which probably has more computing than a computing course! My intention was to take the first steps towards obtaining a job in the world of astronomy. I never made it ...

I had originally left school at the age of 16 (this is back in 1974) with sufficient O and A levels to get me into a university, if I had wanted to go there. At the time I did not, and precious few places were admitting students at the tender age of 16. As a result I spent some time working up in the far north of Scotland as a member of the Forestry Commission, and there the nights were so clear, the stars so bright, that what had been a mildly interesting diversion turned into a consuming hobby. It was the first time that I had seen the Milky Way properly. Not just as a hazy blur of light above the streetlamps but as an almost solid wall of stars, visible across the entire sky. It was also the first time that I had seen a display of the Aurora Borealis, and a very powerful display it was too: nobody had told me that there was sound as well as vision!

This was it, I thought, forget Monty Python and lumberjacks, I wanted to be

an astronomer. But how to go about it? I could spend night after night in the back garden peering through the binoculars and telescope that my parents had been kind enough to buy me without getting anywhere nearer gaining employment at the Royal Observatory (my ultimate dream). I could watch The Sky at Night until the cows came home,



but beyond developing an odd squint caused by rapid switching from television to telescope I was still getting nowhere.

And then, while watching an episode of University Challenge it dawned on me that I could use all those O and A levels and head off to university. What had originally put me off was that my qualifications were in mathematics and physics, and I could never see me persevering through three years of either of those two topics. However, after receiving several prospectuses (prospecti?) from places that had courses in astronomy or astrophysics I soon found that mathematics and physics were precisely what they wanted.

Having already passed the exams they could hardly make me an offer of anything greater than that which I had already obtained, I thought, and so merrily sent off forms to universities and was rewarded with two interviews: Newcastle and University College London. Apart from thinking that Newcastle was a dreary place (it was

“the clincher was the place where they held the interview, which was at the college observatory at Mill Hill in North London.”

raining, and all places look grim when you visit them for the first time in the rain) the only thing I can remember about it is a third year student in a laboratory that we were shown around professing total ignorance of what he was supposed to be studying at the time. Of such things are decisions made, for the interview at University College London was a totally different matter.

For one thing they took an interest in the notebook that I had been keeping from my amateur days, full of all my observations of planets and satellites, double stars, the neighbours, and anything else that came under the watchful eye of my binoculars. For another, they did not seem to object to my wearing jeans and a baggy pullover while all around where clad in suits that had never before seen the light of day and probably never would again. But the clincher was the place where they held the interview, which was at the college observatory at Mill Hill in North London. I was fascinated, I was amazed at the sheer size of the telescopes, and more importantly I was not the student who got on the wrong train at Kings Cross station and ended up on a non-stop to Luton. If he could have the courage to try for a place after starting off like that then so could I.

A few months later and I was there, along with some twenty nine other

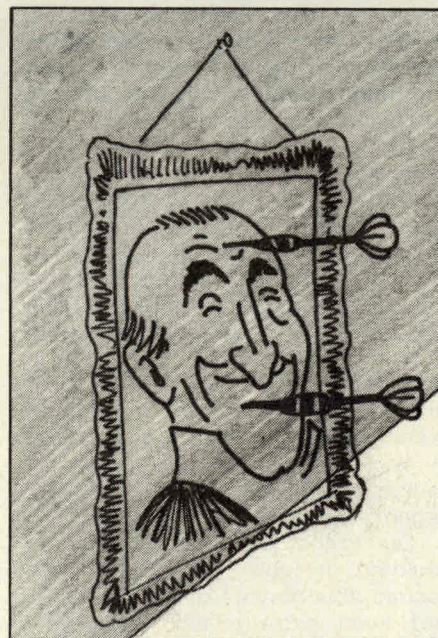
astronomy students, including the non-stop to Luton, who had eventually found his way back again. Before starting off the academic year we had all selected our courses for study, which had not really involved much of a choice at all. In the first year we had to study eight different subjects. Each subject carried a weight of half a unit, thus making up four units in all. Fail in two or more and you were in trouble, was the distinct impression that I got.

Fortunately for us first years most of the choices were made for us, and the only decision left to us was to choose between a half unit course in either pure mathematics or supplementary mathematics. I love mathematics like I love not breathing, but pure maths seemed to be the one to take. Little did I know what I was letting myself in for.

For the first week all went well, and it was exactly what I thought a degree course in astronomy should be. They were talking about things that I had observed, I was allowed (under supervision of course) to handle telescopes that were much mightier than anything I had looked at or through before, and I could seriously see myself making a living out of this.

Then the maths started.

Oh, it was not too bad at first, nothing that I couldn't cope with, but as the weeks went by I began to look at calculus as an old friend, rather than the mortal enemy that it once had been. On



the plus side the practical astronomy and courses in things like basic astronomy, modern physics and astronomy, and so on, were all very interesting. We had courses in computer programming (the first I had ever done, this being long before the days of home computers everywhere), fiddling with lathes in workshops (where every male student with long hair was

severely embarrassed by having to tie it up in a sort of protective scarf), engineering drawing (where my designs would have pleased Heath Robinson), and other subjects that I would not normally have encountered.

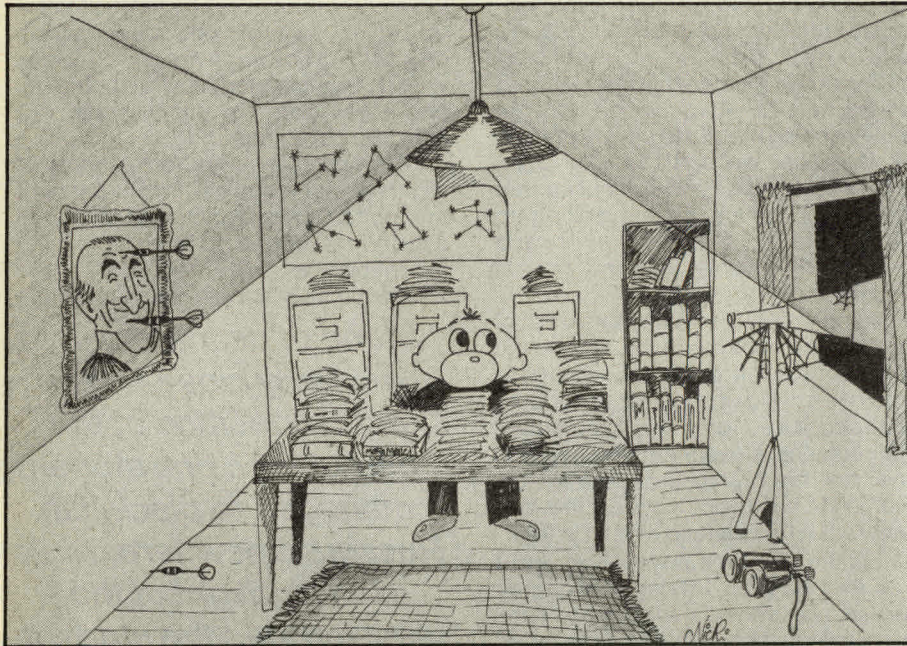
The first year, apart from a hatred of all things mathematical, had its share of moments. I remember one practical astronomy session quite well. By using a theodolite we had to make observations of known stars and fix the

“Some of us managed to get fairly close to the actual position of the observatory, one student managed to place it in Russia somewhere, while the highlight of the session was the student who had it as being nowhere on the planet earth.”

position of the observatory in terms of latitude and longitude. I can recall thinking that it would have been a lot easier just to look it up in an A to Z street map of London, but I was told that this was not really the point of the exercise. Some of us managed to get fairly close to the actual position of the observatory, one student managed to place it in Russia somewhere, while the highlight of the session was the student who had it as being nowhere on the planet earth. A definite boost for observational astronomy had it been true, but sadly not a boost for that particular student's career.

By virtue of trekking out to Mill Hill about once a week we naturally enough got to know the older students, research types most of them, who were supposed to be demonstrating these experiments to us. They in their turn passed on tales of earlier experiments that had gone wrong, including one that involved two students working together in an attempt to calibrate a few instruments. For some reason best known to college one student had to disappear into the wilderness (down the busy main road which runs beside the observatory, actually, since it is now only a teaching place rather than one that did any serious observational work) holding two torches, while the other peered at him through a small telescope. By holding the torches a known distance apart, and measuring that distance as seen through the 'scope, the idea was to get some idea of the accuracy of the instrument. As chance would have it it was quite a foggy night, and before too long the

continued from page 71



student with the torches had disappeared completely from view. Student with telescope was not impressed by this, and the search began. It ended up with both of them in a pub resolutely trying to conduct the experiment across a crowded bar, much to the amusement of the locals.

People tend to think of college days as being a succession of boozy evenings in student union bars, but the powers that be had picked the location of the observatory with care. There was not a pub for miles, and the two students mentioned above had done quite well to find one. They were heroes for weeks.

Back on the studying side the weeks went by, and I soon came to realise that astronomy was not quite the easy career that I had thought it to be. Apart from having to be a mathematical genius, there was all this work to do! Practical experiments to write up, homework (although it was never called that, of course: continuous assessment to them, homework by another other name to us) to do, tutorials to attend, and none of it at all like Porterhouse Blue. Well, not much anyway.

At the end of the first year we had the dreaded exams to sit, and to my amazement I managed to do quite well. On the financial front I had survived without running up an overdraft, due in part no doubt to staying in student accommodation for the entire year, something that I would recommend to any prospective student.

The second year was much the same as the first, only with fewer students involved owing to a little falling by the wayside after the exam results had been announced. On the other hand, for every two students we lost another one came back, having started the year before us and sat out the previous one owing to a

misunderstanding with the examiners. There was very little practical astronomy in that second year, most of the practical work being confined to physics laboratories and working out how to remove the calculators that seemed welded to the benches. Didn't they trust us?

The second year would be, I imagine, the time when most students would discover that life as an astronomer was not for them. A lot of theoretical work, properties of gases, atomic physics, lectures on electronics, and the ever present computer work, and months would go by without stars and planets being mentioned at all.

At the end of that year the exams came around once more, and this time I did not do so well, mainly because I had decided that perhaps I was not cut out to be an astronomer after all. The brain was not equipped to cope with all this work being flung at it. In truth, I had also decided that I enjoyed spending the aforementioned boozy evenings in student union bars, and that, coupled with a year spent in rented accommodation, pushed my overdraft up to and beyond the limits normally tolerated by banks. The third year began under a cloud.

During that final year I found that I could not possibly care less about the cosmic abundances of the elements, and even extra-galactic astronomy involved too much extra-union bar work to make it interesting. The only saving graces in my third year were the extensive course in practical astronomy, two trips a week to the observatory this time and the project. This was, more or less, something of your own choosing, and I spent months worrying about the decay rate of Wolf-Rayet stars, producing vast reams of computer printout that could have

decorated every room in the student house that I was living in (the only thing that saved me from the wrath of the bank manager, a man to be feared by all students: he who was power over the number of pints you can drink is a man to be reckoned with, especially when the bank was opposite the local pub).

That project I found fascinating, mainly because of the computing work involved in it, and at the same time I was enjoying the practical trips up to the observatory. The rest of the courses, another five of them, I found totally uninteresting, and all they did was disturb my day. Sadly I was forced to the realisation that I was not going to be an astronomer after all. It was a fine and most enjoyable hobby, it would not make a rewarding and interesting career.

The only drawback to the project was the fact that we had to give a talk on it, in front of the assembled powers of the Physics and Astronomy Department. Men who live in ivory towers should not throw students out of them, and the half hour of the talk was the most nerve-wracking thing that I had ever done. Fortunately for me I was the first one on, so that by eleven o'clock I was finished, and could quite happily disappear into alcoholic oblivion and rejoice in the suffering of fellow students waiting to take their turn. Apart from one or two appearances to act as moral support to friends, I was a free man!

And so my astronomy career ended before it had really begun. I enjoyed getting presented with my degree at the Royal Albert Hall, even if it did involve traipsing about in a gown. I even quite enjoyed the dinner after the degree results had been announced (third class honours in my case).

I left the world of astronomy and turned to computers, so the degree had not been a complete waste of time. I don't think any degree can be, and would urge everyone who has the possibility of going to university to do so. But, if you are thinking of making a career out of your hobby, think very, very carefully about it. I like astronomy as a casual pastime, I just don't have either the patience or the aptitude to turn it into anything else. You might have, and if you do I wish you the best of luck, but out of the thirty students that started the course in the same year that I did, I know of very few who are still actively involved in astronomy.

As a way of turning an interest into a job I personally cannot recommend it, although computing might be different from astronomy. But, as a way of spending three absorbing years and receiving a grant into the bargain, I can think of few better things to do than to get a degree. You might even end up writing for *CCI*!

P.G.

continued on page 72



STAND 26
COMMODORE SHOW
17th 18th 19th NOVEMBER

NEW! ... and available now!

"AX-S"™ EXPANSION SYSTEM.

...Access to a selection of hundreds of low cost, simple, plug-in expansion boards for your Amiga 500 or 1000!

Here is a list of typical, easy to install, plug-in boards with the technology that AX-S is designed to use:

	£
Single serial port	17
2 serial port	48
4 serial port	79
Parallel port	29
Floppy disk controller	29
Personal telephone dialer/manager	29
8-bit hard drive controller, MFM/RLL	55 / 62
16-bit hard drive controller, MFM/RLL	95 / 110
SCSI hard drive controller	98
1200 baud modem (internal)	50
2400 baud modem (internal)	99
EPROM programmer	125
Digital voltmeter	150
Handscanner	171
A/D / D/A converters	199 / 260
2400 baud FAX	219
9600 baud FAX	389
CD data cartridge/drive	350
Data acquisition cards (various)	375
8 meg RAM memory, expandable from 0K	199
40 meg tape backup	299
20 meg hard drive, complete system	229
40 meg hard drive, complete system	359
80 meg hard drive, complete system	575

Imagine the possibilities with access to hundreds of plug-in boards for your Amiga. For example, your AX-S chassis could have one 80 Meg 5.25" hard drive, two 40 Meg 3.5" hard drives, one 40 Meg tape backup, two 3.5" floppy drives, a FAX card, a modem, a multiple serial port and a scanner... all accessible from your Amiga.

AX-S connects from Amiga's 86-pin expansion port to a hi-tech chassis with a heavy duty -- 200w power supply, ventilation fan, 7 plug-in expansion slots including XT/AT bus and multiple peripheral drive bays. Driver software for some plug-in accessories is supplied. Also included is the AX-S proprietary Resource Library Software to allow Amiga owners to write their own drivers for expansion boards.

The AX-S Resource Library will be available on PD networks.

AX-S... "access\ak-ses\n... the freedom or ability to obtain or make use of"... the most marvelous accessory -- ever -- for Amiga... BELIEVE IT!

Call us or send a large S.A.E. for the FULL information pack current prices and the latest offers. Show prices will be held until 30th November, 1989

GET THE SPIRIT!

BYTES & PIECES
Offer you this and more!

**SUPERIOR EXPANSION
HARDWARE!**

Spirit Technology is in its third year of producing fine professional quality Amiga hardware. Tens of thousands of Spirit RAM expansion boards are in use throughout the world. Spirit is committed to continued development of only superior Amiga peripherals.

NEW!

"OCTABYTE"™ 8MB RAM EXPANSION.

- A2000 or AX-S internal plug-in board.
- A500 and A1000 plug-in low profile external chassis with power supply.
- Expandable from 0K with 1 Meg x 1 DRAMS.
- Full autoconfig. ● Software support disk includes RAM test program.

NEW!

"INTERLOK"™ VIDEO GENLOCK for all Amigas.

A mid-priced, professional quality genlock and encoder with everything needed to produce simple or elaborate production or post-production.

Some features:

- 2, RS 170A video outputs (BNC).
- Key out (BNC).
- Filtered RGB drives out (BNC).
- Locks to studio sync or VCR.
- 23-pin socket for Amiga color monitor.
- Remote fader panel with 0 to 100% overlay control.

INTERNAL 1.5MB RAM EXPANSION for A1000.

- Battery backed clock/calendar.
- Expandable from 0K with 256K x 1 DRAMS.
- Full autoconfig. ● Software support disk includes RAM test program.

INTERNAL 2MB RAM EXPANSION for A500.

- Expandable from 0K with 256K x 4 DRAMS.
- Plug-in -- no jumpers.
- Full autoconfig. ● Software support disk includes RAM test program.

NEW!

A-MAX 1MB INTERNAL CONTIGUOUS RAM.

- Get the most out of your A-MAX software by adding contiguous fast memory to your Amiga's chip memory.
- Available for the A500 and A1000.

NEW!

512K (A501 CLONE) RAM EXPANSION for A500.

- Easy plug-in installation into the "trapdoor" expansion slot.
- Includes battery backed clock/calendar.
- Available 0K with 256Kx4 or 256Kx1 board versions.

HARD DRIVE ADAPTORS for A500 and A1000.

- Amiga matching metal chassis with passthru.
- Optional autoboot kit.
- Full Driver Software.

NEW!

"SLOT MACHINE"™ HARD CARD for A2000.

- Autoboot and Driver Software included.
- Plug-In installation.
- Hard drive installs as HARD CARD or into the drive bay.
- Available with or without drive.

"MIDI-STAR"™ PROFESSIONAL MIDI Interface.

- 2 IN, 6 OUT/OFF/THRU ports.
- Switch control and LED status indicators.
- Amiga RS-232 with passthru.
- Switchable to A1000 or A500/A2000.



Corporate Office: 220 West 2950 South, Salt Lake City, Utah 84115 Phone (801) 485-4233 FAX: (801) 485-6957 USA Sales: Phone (918) 834-2509
Canada: Phone (416) 823-4821 ● United Kingdom: Phone 44-253-734218 ● France: Phone 33-56-37-4378 ● Australia: Phone 61-336-97020

Hobby or Professional Users, your ONE-STOP-SHOPPING from
BYTES & PIECES (Europe) Ltd, 37 Cecil Street, Lytham, Lancs.
Tel 0253-734218 or 0860-254344(Ken) or 0860-444816(Chris)

Indiana Jones and the Last Crusade

US Gold

The arch anti-adventurer Horgan likes a non-shoot 'em up? It must be worth reading about this Indy adventure...

To such an extent, the latest Indy movie was brimming with both action and cunning brainwork on the part of Indy, that US Gold decided to write two completely different games around the film's plot. The arcade style game was programmed in the UK, and released a few months ago. It was a mildly playable platform game, but failed to convey the movie's swash-buckling action and tongue-in-cheek humour. The adventure game, on the other hand, was programmed in the US by Lucasfilm's own development house. Following classics such as *The Eidolon*, *Rescue on Fractalus*, and *Maniac Mansion*, I was rather looking forward to it. I wasn't disappointed.

If you've seen the film, you'll be familiar with the storyline, although the game deliberately takes its own course from time to time. A brief description of the plot is included with the game for anyone who's not seen the film, which doesn't give out any clues,

but gives the player some idea of what's going on. It's set in the year 1938, as the power of the Nazis is beginning to snowball. Indy's dad has gone missing whilst hunting the holy grail. The grail's fabled eternal life-giving powers have attracted the attention of Hitler, and Indy suspects that has

something to do with his father's disappearance. Indy's goal is therefore twofold: to find his dad, and track down the grail.

Rather than use a conventional adventure game format, Lucasfilm have once again employed their unique mouse-driven combination of



animated graphics and speedy text entry. The top two thirds of the screen are filled with graphics of the current location, along with any characters and objects. Beneath that are the available commands, selected by a mouse click. This small vocabulary could limit the game, but most commands are very versatile, and it's rare that you'll want for an extension to the list. With many graphic adventures, knowing what is relevant and what is window dressing can be a problem. Here, selecting the "What is" command and running the cursor over the picture will point out anything the program recognises as an object.

There's plenty of opportunity for conversation. "Talk" is added to the vocabulary where appropriate. Conversations are carried out by selecting multiple-

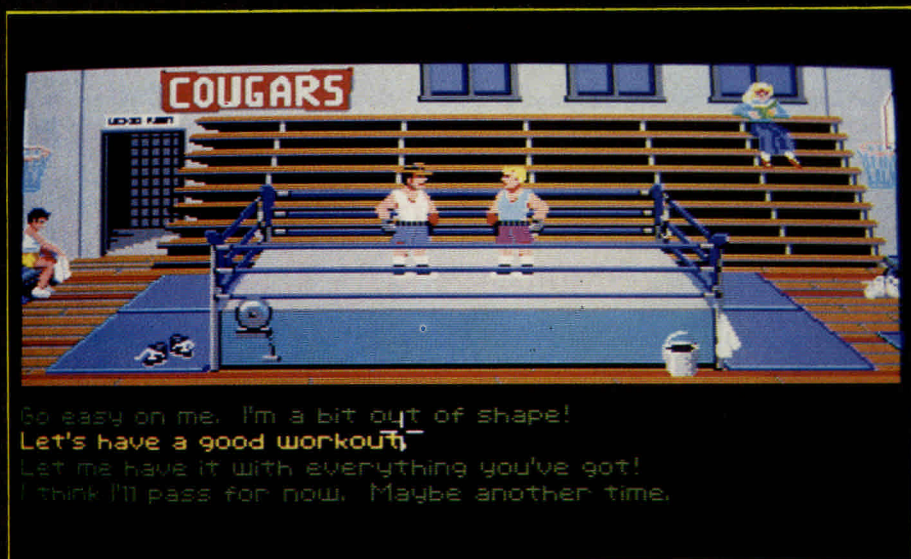


Your search for your dad and the grail leads you all over the world, from the good old U.S.A., to Venice, Austria and finally the Middle East. This ensures a huge variety of locations, resulting in a diverse string of problems. Compared to some of the posers which present

comes to graphics. The characters do have character (unlike the stick men of its forerunners), and are realistically animated. Indy himself goes through a number of costume changes, and each action he performs is properly animated. When he pulls a lever, you see him reach out and tug it. Similarly, direct him down a slippery slope, and he'll lose his footing, ending up in an undignified heap at the bottom. The backgrounds are also intricately detailed at times. Indy's study is full of historical relics from his archeological exploits, many of which are recognised by the program.

Best of all, the solutions to the problems are all logical. None of this shot in the dark spell casting business, just down to earth problem solving. If a situation does ever present you with a brick wall and a seemingly useless clue, consulting your dad's grail diary usually clears it up. As the goals are generally obvious, and the program helpful, experienced adventurers will probably not have much trouble in completing it. However, there's no law that says you have to know Anita Sinclair's vital statistics to play an adventure game, and this is just the ticket for fringe adventurers. It's witty, involving, original, with some great sounds and graphics into the bargain, and not a balrog or cleric in sight! What more could you ask?

T.H.



choice phrases. As with the rest of the game, these are a cinch to operate, reminiscent of certain scenes from Rocket Ranger. Smooth talking can get you out of just about any encounter with a hostile character, but if your wit fails you, you've always got your fists. Some of the weedier enemies can be knocked out with a single punch, but most will give you a run for your money. The fight sequences are keyboard controlled, and a little slow to react, but balance up all that brainwork.

A friendly adventure system alone doesn't make a good game, but fortunately the plot and puzzles are well up to scratch.

themselves later in the game, your initial trouble of escaping a class of archeology students is laughably trivial. Adventures are not usually my thing (I think the last I played was Zak Makraken), but I found Indy no trouble to get to grips with, which probably means it's quite easy for an adventure. The main reason for this is its no-messing approach. You'll find it impossible to die in the opening stages, and if you're barking up the wrong tree, rather than let you set out on a wild goose chase, the program prefers to steer you back onto the right course, without giving too much away.

Indy is a great improvement over Zak and Maniac Mansion when it

Graphics: 82%
Sound: 70%
Playability: 91%
Overall: 90%
Price: £24.95

St. Louis



Hawaii



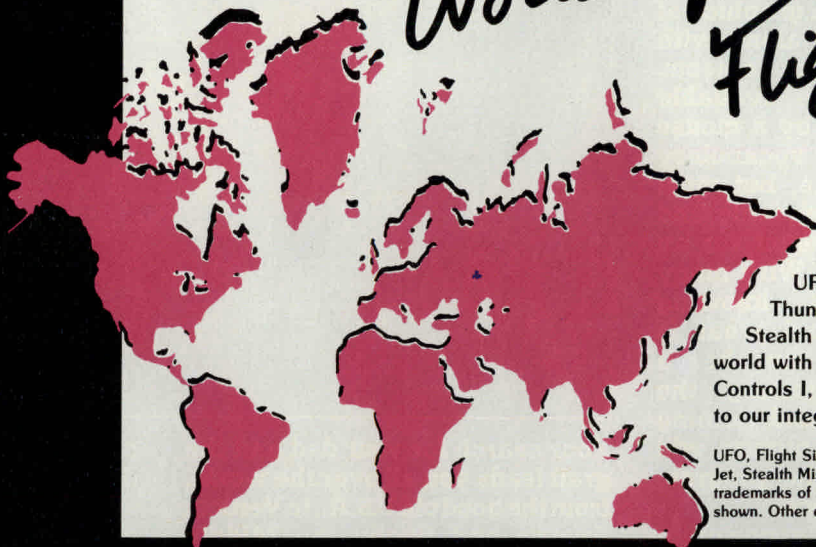
Paris



Tokyo

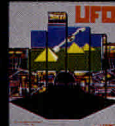


World of Flight



Travel the globe with the best in simulation software; UFO™, Flight Simulator™, ThunderChopper™, Jet™, and Stealth Mission™. Discover the world with Scenery Disks, Flight Controls I, and other supplements to our integrated flight line!

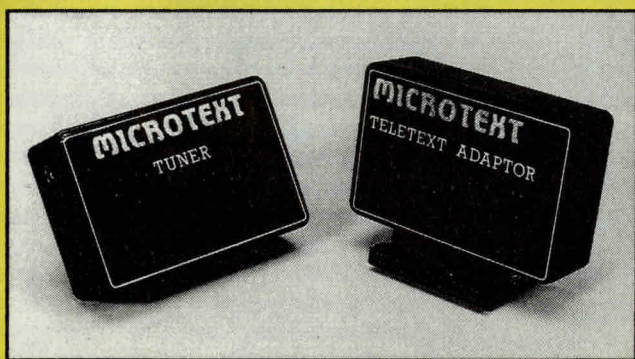
UFO, Flight Simulator, ThunderChopper, Jet, Stealth Mission, and Flight Controls I are trademarks of SubLOGIC Corp. IBM screens shown. Other computer versions may vary.



subLOGIC

TELETEXT

A world of information at your fingertips



Teletext on your 64 or 128 brings you hundreds of pages of the very latest information, free! As well as news or football results, there's weather, road reports and even bargain holidays, sections on computing, gardening and motoring plus much much more.

And unlike a Teletext TV you can do a lot more with the information, you can analyse it from your own programs, save pages to disc or cassette, perhaps to keep a watch on share prices, and even print a page like a recipe or whats on TV.

The Microtext Adaptor fits neatly on the user port, just connect it to the Tuner and plug in an aerial or the Adaptor alone may be connected to the VIDEO OUT socket of a video recorder.

"I wouldn't hesitate to recommend this to anyone." - Your Commodore.

The Microtext Adaptor is only £79.95, Adaptor and Tuner just £124.95 inc p/p. Both include lead, software and manual.

The Adaptor is suitable for use all over Europe, Australia and New Zealand. Tuner is for UK only. Overseas add £2.00 (£4.00 outside Europe).



MICROTEXT



Dept. CI, 7 Birdlip Close, Horndean, Hants PO8 9PW
Telephone: (0705) 595694

NEW! REALM NEW! Multi-user Magical Fantasy Game

EVER PLAYED A MULTI-USER GAME?

compunet

Make new friends trading in outer space: Federation II

The friendly Compunet Club's definitive multi-user space game

All this available with a local phone call:

- Partyline - your instant chat facility
- Views, reviews, humour and telepublishing
- Huge software library
- Thousands of updates every week
- Play by electronic mail e.g. Chess, US football
- Newsbytes award winning on-line computer news

"A wealth of helpful information and most importantly a great way to make new friends"
MW12

Compunet, Unit 26, Sheraton Business Centre, Wadsworth Road, Perivale, Middx, UB6 7JB. For enquiries and Access/Visa orders ring: Tracy on 01-997 2591.

— Please send me the Compunet Information Pack with details of your modem offers.

— I already have a suitable modem for my ST or Amiga (i.e. Linnet, Linnet 1200, any Hayes compatible and most "dumb" modems). Please forward the Compunet terminal software, registration and Free month access for £24-95.

— Please send me the Compunet modem for C64/128 plus software, registration and Free month access for £39-95.

Name _____
Address _____
Postcode _____ Telephone Number _____

WIN! WIN! WIN!

INDIANA JONES and the LAST CRUSADE

PLUS...

20 INDY T-SHIRTS!

Who'd have thought our residential joystick jockey Tony Horgan would go ape over an adventure game? I, and the rest of his minions, couldn't believe it when he gave us a half day, just so as he could get on with the game in peace! The only trouble is, he'd never made a cup of coffee for himself, and didn't know how to work the machine, so my half day was cut short when he called me in a rage of frustration, demanding that I came back to the office to put the coffee on! "While you're here," he said, "you can sort out a competition for the readers, and don't make me out to be some sort of power-crazy joystick junkie when you write it up!" Would I do such a thing to my beloved boss? No, we all love him, even with the nervous twitch in his trigger finger, and his insistence that we all walk around the office on our knees.

Sure enough, good old US Gold have come up with the goods once again, so soon after generously donating a heap of goodies for their Indy action game. Answer the following questions correctly, and if your postcard is one of the first fifteen to take Mr Horgan's fancy, you'll be the lucky recipient of a copy of the brilliant Indy graphic adventure game (Amiga version only), and a trend-setting Last Crusade T-Shirt! There's also a T-shirt in it for the runners up.

1. In The Last Crusade, what is it that attracts the Nazis to the Holy Grail?
 - a) its solid gold construction?
 - b) its eternal life giving powers?
 - c) its religious significance?

2. Is Indy's trademark:
 - a) chains and manacles?
 - b) a whip?
 - c) black leather thigh boots?

3. Was the Indy adventure game developed by:
 - a) Lucasgame Films?
 - b) Spielbergfilm Games?
 - c) Lucasfilm Games?

Answers on a postcard to:
**Indy Adventure Comp
CCI
40 Bowling Green Lane
LONDON
EC1R ONE**

**Answers
to reach us no
later than February
15th**

ADVENTURE HELPLINE



Do you play computer adventures?
Have you ever been faced with a seemingly
impossible situation?

WE CAN HELP YOU

Our adventure rescue team works 7 days and
evenings a week and will be pleased to answer
your queries.

We offer help on any game on any computer.

So, if you're tearing your hair out ring
this number now.

0898 338 933

Keep this number safe.

25p per minute off peak 38p per minute peak time.

I.C.P.U.G

the Independent
Commodore Products Users Group
is the largest and most friendly
computer club in the country

- Many local groups with regular meetings
- Superb newsletter magazine with an average of 90 pages, bi monthly
- Back issues 1989 available to all. £2.50 each
- We support all CBM, Pet, Vic 20 and all Amigas
- FREE Software Library of PD programs for all machines
- Over 300 disks of Amiga PD software available free to members plus p&p
- Help and Advice. Discount scheme
- Subscription only £17.00 including £1 Share in ICPUG Co-op
- Before applying for any software please wait for your membership details to be sent to you
- Overseas prices on application

If you are seriously interested in using or programming
any Commodore computer, then joining ICPUG is a must!

For full details, send a stamped addressed envelope to:



ICPUG Membership Secretary, Jack B. Cohen,
30 Brancaster Road, Newbury Park,
Ilford, Essex, IG2 7EP
01-590 8849 Day - 01-346 0050 Even & W'ends.

Super COMBO Super PRICE!

Available for C-128



New Languages for your C-64 and C-128

SuperPascal - 64	£39.95	SuperPascal - 128	£39.95
SuperC - 64	£39.95	SuperC - 128	£39.95
Cobol 64/128	£29.95	Fortran - 64	£29.95
ADA - 64	£19.95	Forth - 64	£12.95
LOGO - 64	£14.95	Pilot - 64	£14.95
Video Basic - 64	£19.95	Pascal - 64	£14.95
Zoom Pascal -	£9.95	Assembler/Monitor - 64	£9.95

SPECIAL OFFER Super C + Super Pascal (C64 or C128) £59.95

Send S.A.E. for full details

**ADAMSOFT, 18 NORWICH AVENUE,
ROCHDALE, LANCS OL11 5JZ
Access/Visa orders Tel: 0706 524304**

OFFICIAL COMMODORE AMIGA DEALER

COMPUTERS	
Amiga B2000 + 2286 AT Bridge + 20Mb Autoboot + 1084 Monitor	2299.00
Amiga B2000 Only	PHONE
Amiga B2000 + 1084 Col Mon	PHONE
Amiga 2088 PC/XT Bridgeboard + 5.25" Drive	249.00
Amiga 500 NEW BATPACK comprising: A500 + Modulator	£359.00
DPaint II/BATMAN the Movie/Interceptor/New Zealand Story	
Amiga 500 CLASS OF THE 90's Education Pack comprising:	PHONE
DPaint II/S'Base/Maxiplan/Publ Choice/Dr T's Midi/BBC Emul etc.	
Amiga 500 + Philips 8833 Stereo Col Mon	589.00
Commodore 64C NEW LIGHT FANTASTIC Pack comprising: 64C + C2N Light Gun + 3D glasses + 6 games + Paint prog + Music Prog + Typing Tutor + Arcade Construction Kit + Audio Tape Align	139.00
Commodore PCs	PHONE
PRINTERS	
Citizen 120D Parallel or Commodore	129.95
Star LC-10 Parallel	159.00
Star LC-10 Colour Parallel	205.00
Star LC-10 II (New)	185.00
Star LC24-10 24 pin Multi-font 170/57cps	239.00
All Okimate 20 consumables normally in stock	PHONE
MONITORS	
Philips 8833 Stereo Colour Monitor	239.00
Philips 7502 Green Screen Monitor	75.00
MISCELLANEOUS	
Amiga 2000/PC 20Mb Hard Disk Drive	180.00
Amiga 512K RAM/Clock Exp	99.95
Amiga 500 AMDRIVE 30Mb Hard Disk Drive	399.00
Amiga 590 20Mb Autoboot Disk Drive, 2Mb RAM Expandable	395.00
miniGEN Genlock for Amiga	109.00
Commodore 1541-II Disk Drive	139.00
Commodore C2N Data Recorder	29.95
External 3.5" Disk Drive for Amiga	79.95
Internal 3.5" Disk Drive for A2000	69.95
Power Supply for C64	26.45
Super-G Cent I/F + Graphics C64/128	34.95
Surge Protector 13A Plug	12.95
Surge Protector 3-Way Adaptor/4-Way Dist Unit	19.95/15.95
SOFTWARE	
Vizawrite 128 + Spellcheck	49.95
Vizawrite 128 Spreadsheet + Database	59.95
Superbase 64 or 128	29.95
Superscript 64 or 128	29.95
Tasword 64 40/80 Col WP - Tape or Disk	24.95

ALL PRICES ARE INCLUSIVE OF VAT AT 15%
CARRIAGE £5 (EXPRESS £10). Software and small items free.
Prices subject to change without notice

E&OE

Delta Pi Software Ltd

8 Ruswarp Lane, WHITBY, N. Yorks. YO2 1ND.
Tel: 0947 600065 (9am - 7pm)

Programming Techniques Getting Faster By The Second

Peter Gerrard looks at ways to make your programs run faster and faster and...

Last time around we looked at ways of shrinking your programs so that they occupied less memory, and that is just one way in which program execution can be speeded up. Smaller programs run faster, as they have less memory overheads to worry about, but there are many other ways of improving the speed at which your programs operate. But why should you want to do that? What are the advantages in having a program run a couple of seconds faster than it would otherwise have done? Let us consider the adventure program.

Typically, here, the user inputs a command and waits for the program to interpret it. The user might want to move somewhere, examine something, pick up a carelessly discarded treasure, or whatever, but they always have to wait for the computer to rumble its way through the program code and come back with some sort of answer. If this only takes a few seconds it is not so bad, but anything longer than that and the user is soon going to lose patience with the program and go on to somebody else's adventure. If a program that has been speeded up can, on average, reply to an input some five seconds faster than it might otherwise have done, after 120 inputs you will have saved ten minutes. That, when you are ploughing your way through a lengthy adventure, can soon mount up to a very considerable saving in time. What is more, it keeps the user playing YOUR adventure rather than that of somebody else.

Needless to say there are programs other than adventures that will benefit from this sort of increase in speed. A database scanning through hundreds of records, or sorting records into order, will not be used for long if it runs at a painfully slow speed. But given a

reasonable response time people will keep coming back for more. I am sure you can think of plenty of other reasons why it would be a good idea to have your programs running as fast as possible.

And how, you may be wondering, do we measure any sort of increase in speed? There are a number of ways of testing the speed at which a program is operating, and since we do not want to be sitting over the 64 with a stop watch all the time we might as well get the computer to test itself.

One of the easiest ways of making virtually any program run faster is to use integer numeric variables rather than ordinary ones. You are probably well aware that integer variables carry the label % after their name, so that you might have A%=12 rather than A=12. This does, of course, restrict you to integer arithmetic only, but if that is all you intend using then all well and good. If you were writing a program that involved the use of sums of money, you could still have everything in integer arithmetic then just divide any answers that need to be in pence by one hundred to get the final sum. But does it really make that much of a difference? We shall soon find out. Type in and run the following program:

```
100 A=TI
110 FOR I=1 TO 10000
120 X=12:Y=24:Z=Y/X:X=Y/Z:Y=X*Z
130 NEXT I
140 PRINT TI-A' JIFFIES USED'
```

Now try altering line 120 so that only integer variables are used, that is, ones like X%, Y% and Z%, making sure that you change all of them. Run the program again, and see what the number of

jiffies used comes to this time. In this sort of short example there obviously is not going to be a huge difference, but even from this kind of thing you can probably readily appreciate the advantages to be gained by using integer variables (if possible) throughout the whole of a longer program. To speed things up further, could you not use FOR I%= etc. and have NEXT I% at the end? Try it and see!

Using this timing technique it is possible to find out how long it takes for various commands to be executed, and it might be worth your while drawing up a table of the ones that are most commonly encountered and seeing how long it takes for them to operate. You never know, you might manage to make some further time savings that way.

There are numerous other ways of speeding up programs apart from using integer variables. To stick to our adventure example, you should put the most commonly encountered verbs and nouns before the rarer ones, so that program execution for those will be fast and thus make the rest of the program seem fast as well. For example, in traditional adventures the user will probably be moving around quite a lot of the time, so the verb Go, or the movement directions north, south, east and west (and better still, n, s, e and w) should come at the front of any list of verbs so that the program can recognise them straight-away and act on them. Then come other such common verbs as examine, look, get, drop and so on, preferably with abbreviations for the most frequently used ones. There is little point in putting obscure things at the front of your code, situations that might at most only be required a couple of times in the program, because then the program will still

continued on page 80

continued from page 79

have to go through them every time a verb is being analysed and this will, of course, take time.

This sort of thing only really applies to adventure programs though, but the rule can be extended to cover many further situations and leads us neatly into the verbal battlefield that often surrounds the words "structured programming". I am no great believer in flow-charting everything when writing a program, but it can have its advantages, and even I have been known to make diagrams on the back of envelopes before getting down to tackle a program of any great length. A collection of often used subroutines at the back end of a program will help the flow (and speed) of any lengthy program, and with a little bit of forethought we can usually manage to eliminate the nest of IF... THEN vipers that formed the bulk of the first article in this series. There is nothing that can slow a program down more than having to trace its weary way through a horde of IFs, THENs and GOTOs, when a few notes before starting out would have told us how to avoid them. There is no need to eliminate them entirely, of course, because there will always be times when we do need to know IF something is true and whether we THEN have to GOTO anywhere to take care of it, but the fewer the better, at least as far as speed of program is concerned.

Back to variables and their use in terms of making a program operate at a faster lick. Although it is nice to have identifying variable names such as LABEL or NAME there really is not much point, since the 64 only recognises the first two letters anyway, and having long names takes up memory which usually means taking up speed as well. So here it would be better to stick to LA and NA. But what you can do with variables is to make them equal to any commonly occurring numbers within your programs. The variable PI, for instance, if made equal to (roughly, I know) 3.14159, will make things run much smoother if you can then use equations like $CI = 2 * PI * RA$, where CI would stand for circumference and RA would be equal to the radius of our imaginary circle. It's much faster than putting 3.14159 all the time.

A lot of what was said last time about reducing memory overheads also applies here as well (ON VERB GOTO instead of a host of not so golden IF... THEN statements, and so on) but nowhere will the increase in speed be more dramatically realised than by making the transition from Basic to machine code. Now some might say that this is not fair, and that they haven't really got to grips with Basic yet, never mind machine code, but you do not actually have to know anything about

machine code in order to use routines that are published in magazines such as this, for instance. As long as the author of the routine tells you how it works and how you might use it in your own programs (the Basic Aid program in the October 1989 issue of CCI is a splendid example) then there is no need for you to know even the slightest thing about accumulators, x registers and the like. But you could always learn!

However, if you do not want to learn, there are such things as compilers available for the 64, but check very carefully before you go out and buy one. Make sure that it is 100 percent compatible with Commodore 64 Basic, because not every compiler is true to the machine. Assuming you find your compatible compiler you could then use it to compile your master copy, making sure that you do have a backup in case of disaster, because once a program has been compiled you cannot then de-compile it. So what do compilers do? Roughly, they convert your Basic program into a sort of pseudo-machine code that can be run on the 64. This means that short programs tend to get longer, as they need a "translator" part tacked on, but with longer programs the compilation process reduces them in size, so even with the "translator" they still end up as shorter than when they started. And they run much faster! More next time.

P.G.

Alternities

by Michael P. Kube-McDowell
(Sphere Books £3.99)

Imagine not one but four, or even more, parallel universes where life in each one goes on unknown to all the others - except one. This is the concept in Michael P. Kube-McDowell's 'Alternities'.

The Home universe has discovered a 'gate', a way to enter into the other universes, and proceeds to smuggle spies, called 'runners', into the alternities. Not only does the Home alternity want to find out if any of the others have made discoveries that they do not yet have, but the President of the USA is intent on teaching the USSR a lesson - the cold war is still very much in existence in the Home alternity - and then, realising that it might result in a global war, decides to decamp into Alternity Blue and take it over, too.

All other alternities are codenamed in colours by Home and it appears that Blue is the one nearest in culture to the Home universe. So President Peter Robinson, after forcing a confrontation with the Russians by 'nuking' one of

their submarines, makes plans to go through the 'gate' to Blue, with various trusted personnel, and make his home there.

The main character in this story is Rayne Wallace, gate-runner spy, - albeit a reluctant one - husband and father, whose marriage is rapidly foundering on the rocks of secrecy, for he is not allowed to reveal to his long-suffering wife, Ruthann, what it is that keeps him away from home for so long, so often. Being a runner is not, though, the sole reason. In the Blue Alternity Rayne has discovered the alter ego of a girl he once loved and lost when at Home and he is torn between his desire for her and his still inherent love for his wife and his small daughter.

There are also several sub-plots, including one concerning a sadistic friend of the President that I found quite unpleasant. Senator Endicott is a man who gets his kicks by kidnapping and torturing young girls, but I really don't think that the intimate details of his

nasty way with women needed to be described quite so specifically. Perhaps Kube-McDowell should learn that to insinuate fires the imagination much more vividly than a plethora of graphic detail.

Michael P. Kube-McDowell, (there's a name that it is going to be hard to forget!), is a writer new to me - and, perhaps not only to me, for I failed to find him listed in the 'SF' bible, the 'Encyclopedia of SF', either - but he has a lively and inventive way with words.

I found 'Alternities' interesting but confusing. There is so much jumping about from one universe to another that, at the beginning, I often had to look back at the headings to find out which one I was reading about and it wasn't until about a third of the way through that the story began to grip.

There were also a few loose ends left at the conclusion but that may be, I am inclined to think, because the author intends to write a sequel. If he does I hope that, next time, he will restrain his urge to try and cram too much into one novel, which I think is the chief fault of 'Alternities'.

Nevertheless, I think we shall be hearing a lot more from this promising new SF find.

D.M.

The Directory!

ISSUE 2
OUT NOW!

The Directory! is a comprehensive buyer's guide to Amiga products, both software and hardware. The information it contains has never before been assembled in one publication, making it an absolute must for any Amiga user.

For the up-to-date information on what is available in Graphics, Sound, Business, Utilities, Printers, Monitors and of course Games and much more. The Directory! is the one single source of the what, how, where and how much of the Amiga Dimension.

The Directory! is published by Croftward the creators of Amiga User International, price £2.

Fill in the coupon now, and get a priority copy of The Directory! rushed to you post free!

To: Amiga User International Magazine, Finsbury Business Centre, 40 Bowling Green Lane, London EC1R 0NE
Please rush me my own copy of the Directory!
I enclose my cheque/P.O.* for the value of £2. Made payable to 'Croftward Limited
Name _____
Address _____

A90

The Directory!

No Amiga is complete without one!

M.A.S.T. MEMORY AND STORAGE TECHNOLOGY (UK) LTD

TECHNICAL EXCELLENCE

Important Announcement

M.A.S.T. TAKE YOU OUT OF THE PAST AND INTO THE FUTURE WITH A POWERHOUSE OF PERIPHERALS FOR YOUR AMIGA.

DURING THE PERIOD MID DECEMBER / MID JANUARY THE STAFF OF GEORGE THOMPSON SERVICES AND M.A.S.T. (UK) LTD. ARE VISITING "AMIGA ORIENTATED COUNTRIES" WORLDWIDE IN THEIR SEARCH FOR MORE NEW AND INNOVATIVE AMIGA PRODUCTS. WHETHER THEY COME FROM THE FAR EAST, THE U.S.A. OR EUROPE, WE PROMISE YOU A VERY EXCITING AMIGA 1990. PLEASE READ ON!

AMIG-a-TOSH

AMIG-a-TOSH is the MAST Macintosh compatible floppy drive fully compatible with the A-MAX Mac emulator. MAST guarantees its performance with A-MAX.

- SUPERSLIMLINE
- QUALITY FUJITSU DRIVE
- LOW PROFILE
- ONE YEAR WARRANTY

SHOW PRICE £149.99 (£199.95)

FLICK-OFF

A500-A1000-A2000
ELIMINATE
INTERLACE
FLICKER
DTP? CAD?

HI-RES GRAPHICS

FLICK-OFF LETS YOU EXPLORE THE POSSIBILITIES

- Simple to install
- Requires multi-sync monitor
- Eliminates flicker on all interface modes including HAM
- Several software options

COMING SOON!

BOING OPTICAL MÓUSE

THE HIGHEST QUALITY PROFESSIONAL MOUSE
★ COMPLETE WITH SPECIAL MAT

SHOW PRICE £69.99 (£79.99)

THE COMPLETE AMAX MAC EMULATOR

★ 128K ROMS INC.

SHOW PRICE £219.99 (£334.90)

"BOOT SELECTOR"

Problems with your internal drive? This clever device allows you to boot DF1: at a flick of a switch

ONLY £9.99

MICROMECS ULTRA LOW POWER A501 ALTERNATIVE



• BATTERY BACKED CLOCK

SHOW PRICE £79.99 (£99.99)

• 512K RAM
HIGH SPEED
LOW POWER
1 MEG DRAM's

MINIMECS UPGRADE
£79.95 EACH 512K
FACTORY OFFER ONLY

MINIMECS 2 MEGABYTES EXTERNAL RAM

• Additional to any memory currently in your system.

- Autoconfigure
- Fast RAM
- Low Power
- Ram Tachometer
- Autoconfigure LED
- Pocket Size
- Zero wait states
- Compatible with A501
- Easily installed external module



A500/1000
512K £149.95 (£179.95)
1MEG £229.95 (£279.95)
2MEG £369.95 (£479.95)

UNIDRIVE THE ORIGINAL AND BEST

- Fully Compatible
- Quality Fujitsu Mechanism
- Superslimline
- No Clicking
- May be switch disabled
- 1 year limited warranty
- Very low power



SHOW PRICE £69.99 (£79.95)

"TWINIT" ALLOWS YOU TO CONNECT TWO DISK DRIVES WITHOUT THROUGHPUTS TO YOUR AMIGA ONLY £11.99

TWINDRIVE

- Two quality Fujitsu drives in a slimline case
- No clicking
- Each drive may be switch disabled
- Quiet operation
- Limited one year warranty
- May be powered from the Amiga or from optional 9V DC plugpack at £10



SHOW PRICE £139.99 (£149.95)

THE INFINITY MACHINE

Q. DO YOU WANT THE FASTEST AUTOBOOTING, DMA, SCSI INTERFACE AVAILABLE?

A. NO PROBLEM - It's included with the basic module of The Infinity Machine

Q. NEED LOTS OF MEMORY?

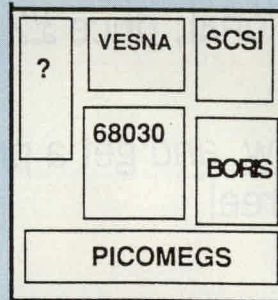
A. Infinty accepts up to 8 megabytes of RAM. The memory can be selected as either 16 or 32 bit memory. It can be used with both the 68000 and 68030. The PICOMECS memory can run in interleaved mode in most configurations for even faster access.

Q. NEED SPEED?

A. NO PROBLEM - you have the choice of a 68000 running at 7 OR 16 MHz in the PICOMECS address space or a 68030 running at 16, 20, 25, 33, 50 MHz.

Q. WHAT ABOUT A2000 OWNERS?

A. In early '90 you will be able to have a machine as fast as an A500 or A1000 fitted with INFINITY



A500 AND A1000
COMING SOON!

TINY TIGER II MASSIVE MASS STORAGE 30/50/90/136/182 Megabytes NEW DESIGN

OPTIONAL
2 YEAR
WARRANTY
ON QUALITY
FUJITSU 90, 136, 180 Meg drives.

COMING SOON!



This quality unit has been designed to plug into any Amiga SCSI INTERFACE including THE INFINITY MACHINE, the MAST PARALLEL SCSI INTERFACE (when you want a fast system that is portable between different Amigas), or as a second drive plugged into the additional connector on the FIREBALL A2000 interface. Tiny Tiger feature a front panel SCSI address display, auto power-on with computer, switch selectable SCSI and pass thru. GREAT VALUE.

"CHANGE KICKSTART"

AT LAST IT'S POSSIBLE TO CHANGE KICKSTART AT THE CLICK OF A SWITCH! THIS SPECIAL UNIT ALLOWS BOTH K/S V1.2 AND V1.3 TO BE FITTED INSIDE YOUR COMPUTER.

ONLY £29.99 WITHOUT ROMS 1.3 ROM'S AVAILABLE AT £25.00

NEW ... THE CHIP SHOP ... NEW

UPGRADE YOUR A590 FOR ONLY £59.99 PER 512K!
THE NEW FAT AGNES CHIP FOR ONLY £75.00!

"BRAKE" FOR THE AMIGA

DO YOU FIND SOME GAMES TOO FAST? LIKE TO SLOW THEM DOWN? THIS CLEVER INTERNAL PERIPHERAL DOES JUST THAT.

- ★ COMPLETE WITH SWITCH
- ★ ADJUSTABLE CONTROL
- ★ EXCELLENT FOR PROGRAMMERS
- ★ TWO EXCITING "SHOOTEMUP" GAMES FREE!

ONLY £19.99

"AUTOFIRE"

MASS DESTRUCTION OF ALIENS REQUIRES CONSTANT PRESSING OF THE JOYSTICK FIRE BUTTON. NO MORE! THIS CLEVER DEVICE SWITCHES IN AUTOFIRE AT THE CLICK OF A SWITCH.

- ★ ADJUSTABLE SPEED CONTROL
- ★ TWO EXCITING "SHOOTEMUP" GAMES FREE!

ONLY £17.99

COMING SOON: EPROMMER V1.1/EPROM BANK: The complete Eprom Programmer and Eprom Bank for the Amiga. Program and blow your own Eproms for use in a sophisticated 16 x 64 - Eprom Bank. These two units will add a new dimension to Amiga Computing.

SPECIAL NOTE: All of the priced items above are regular stock items. Since M.A.S.T. (UK) Ltd., started trading, over 95% of all orders received have been despatched within 24 hours. It is still advisable to telephone for information on availability. Please note that personal cheques have to be cleared prior to despatch of goods. Access, Visa orders welcome. BFPO, Channel Island and Scandinavian customers please deduct 12% from all prices.

PLEASE ADD £5.00 TO EACH ORDER OVER £60 TO COVER THE COST OF 1ST CLASS REGISTERED POST

MEMORY AND STORAGE TECHNOLOGY, INC.

M.A.S.T. (UK) LTD,
Unit 1, Dippen,
Broddick, Arran,
Scotland KA27 8RN.
Tel:(077 082) 234

M.A.S.T. U.S.A.
3881-E Benatar Way,
Chico, CA 95928
Tel:(916) 342-6278

M.A.S.T. AUSTRALIA
19-21 Buckland Street,
Broadway, NSW 2007,
Tel:(02) 281 7411
Fax:(02) 281 7414

ALL PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

ATARI ST and AMIGA

Sixteen Bit Superdeals from the Sixteen Bit Specialists !

CUSTOMERS PLEASE NOTE! When comparing prices remember ours include fast delivery by courier.

NEW !!

520 STFM Power Pack
£359.00
Inc. VAT and Next Day Delivery

Power Pack includes:

- ★ 520 STFM 512K Keyboard with Built-in 1 Megabyte disk drive and TV Modulator
- ★ Over £550 worth of games software, including OutRun, Gauntlet 2, R-Type, Space Harrier, Super HangOn and 16 more Top Games
- ★ Organiser Business Software including WORDPROCESSOR, SPREADSHEET and DATABASE.
- ★ First BASIC and First Music Utility Software
- ★ FREE JOYSTICK AND FREE MOUSE MAT WORTH £4.95
- ★ All leads, manuals PLUS MOUSE and free mains plug!

REMEMBER! Many ST's do not come with BASIC - ours come with ST BASIC REV D by Metacomco.

520STFM Explorer Pack
£279.00

- ★ Explorer Pack Includes 520STFM 512K Keyboard with built-in 1 Megabyte Disk Drive and TV Modulator
- ★ 1 FREE Game, ST Tutorial and METACOMCO Basic worth £25.00
- ★ All Leads, Manuals PLUS MOUSE and FREE Mains Plug! ★ Free mouse mat worth £4.95

1040STFM Super Pack
£439.00

- ★ Includes 1 megabyte keyboard PLUS £450 worth of software. Comprising 21 games and Organiser Business Software. Also includes Metacomco BASIC, Mouse Pad, all Leads, Manuals and Mouse.

1040STFM Business Pack
£439.00

Business Pack includes:

- ★ Atari 1040STFM Keyboard with 1 meg memory and 1 meg built-in disk drive plus TV modulator.
- ★ £385 worth of Business Software including MICROSOFT WRITE word processor (£150), SUPERBASE PERSONAL Database (£60) and VIP PROFESSIONAL Lotus 123 Spreadsheet clone (£150). Metacomco Basic (£25.00)
- ★ All leads, manuals and mouse.

MEGA 1 BUSINESS PACK
£529.00

Features:

- ★ Separate Keyboard and System Unit.
- ★ All the Software included with 1040 STFM Business Pack.
- ★ Blitter chip installed for faster graphics

Inc SM124 Mono Monitor..... £628.00

ACCESSORIES

Quickshot II Turbo Joystick.....£9.95	Branded Memorex 3.5" DS DD Disks
Competition Pro 5000 Joystick£13.95	Box of 10.....£13.95
Competition Pro with Autofire£14.95	Memorex Disk Box
Konix Speedking Joystick£11.95	For 40 3.5" Disks£8.95
Red Mouse Mat with Amiga logo...£5.95	Amiga 1/2 Meg Expansion£119.95
Plain blue Mouse Mat£4.95	Control Centre Atari or Amiga.....£39.95
Contriver Amiga and ST Mouse with FREE Holder and Mouse Pad £20.95	


PRINTERS

Star LC24-10 24 pin incl. lead ST/Amiga	£259.00
Star LC10 including interface lead for ST/Amiga.....	£169.00
Star LC10 colour including interface lead for ST/Amiga.....	£219.00
Citizen 120D including interface lead for ST/Amiga	£159.00

SEIKOSHA 80 COLUMN PRINTERS - AMAZING PRICES

Seikosha 9 pin NLQ including interface lead for ST/Amiga.....	£139.00
Seikosha 24 pin LQ including interface lead for ST/Amiga	£239.00

Amiga A500 BAT Games Pack
£399.00
Inc VAT and Next Day Delivery



BAT Games Pack includes:

- ★ Amiga A500 512K Keyboard with Built-in 1 Megabyte disk drive.
- ★ Free TV modulator worth £24.99 allowing you to use the Amiga with a normal TV.
- ★ DELUXE PAINT II and PHOTON PAINT Graphic Packages WORTH over £100!
- ★ FREE, only-just-released BATMAN - THE MOVIE games software.
- ★ NEW ZEALAND STORY arcade games software.
- ★ F16 - INTERCEPTOR - amazing 3D flight simulator software.
- ★ A further £230 worth of Games Software, including BUGGY BOY, MERCENARY, BARBARIAN, WIZBALL & six more games.
- ★ FREE MOUSE MAT worth £4.95
- ★ Amiga BASIC, Amiga EXTRAS 1.3, Workbench 1.3 PLUS the Amiga Step by Step Tutorial.
- ★ All leads, manuals PLUS MOUSE and mains plug!

Amiga A500 Business & Games Pack
£479.00



- ★ Includes Amiga A500 and TV modulator PLUS BATMAN: THE MOVIE, F16 INTERCEPTOR, NEW ZEALAND STORY and in addition a comprehensive suite of business programs including: KIND WORDS II, Word Processor (featuring Spellchecker and Thesaurus), HOME ACCOUNTS by Digita International and SUPERBASE PERSONAL database software.

AMIGA 1 MEG BAT GAME PACK
£529.00

1 Meg Bat Games Pack includes:

- ★ Fitted 1 Megabyte Memory Expansion + Real Time Clock Card
- ★ Everything listed for the A500 Bat Game Pack
- ★ DRAGON'S LAIR 1 MEG MEGAGAME!

EXTERNAL DISK DRIVES

Atari SF314 1 Megabyte.....	£139.00
Amiga A1010 1 Megabyte	£109.00
Cumana 1 Megabyte Atari or Amiga	£99.95
NEC 1 Megabyte Atari or Amiga	£89.95
Atari Megafile 30 Hard Disk.....	£449.00
New! Commodore A590 20 meg hard disk.....	£369.00
A590 Hard Disk + Memory Upgrade installed.....	Phone

MONITORS

Commodore Amiga A1084 Stereo colour Monitor inc lead	£249.00
Atari SC1224 Colour Monitor inc lead	£259.00
Atari SM124 Mono Monitor including lead.....	£104.00
Philips CM8833 stereo colour monitor inc. lead for ST or Amiga.....	£239.00

CREDIT CARD ORDERLINE 0908 78008 (Mon - Sat 9am - 6pm)

To order either call the orderline above with your Credit Card details OR make a cheque or P.O. payable to Digicom Computer Services and send it with your order to the address below. Callers are also most welcome at the address below

DIGICOM

Unit 36, Wharfedale, Fenny Stratford, MILTON KEYNES MK2 2AZ

All prices include VAT and delivery by courier



S-ENTRY C64/128

BASIC COMMANDS

S-ENTRY intercepts several vectors in the operating system, and because of this the normal basic commands are not available... don't worry... you can still use them by prefixing the command with the @ symbol, so SAVE would become @SAVE, etc.

NOTE: do not use any DOS wedge, or you will confuse S-ENTRY.

S-ENTRY DISABLE

Before you run any programs that you have entered, S-ENTRY MUST BE DISABLED. Enter an ! on its own and S-ENTRY will be removed from memory and the normal operating system restored. REMEMBER ALWAYS SAVE A PROGRAM BEFORE YOU RUN IT!

MISSING LINES

In order to provide you with a flexible system, S-ENTRY only checks on a line by line basis. So if you miss out line 540 say, S-ENTRY will NOT report an error.

This may sound odd, but it does allow you to enter part of the program, then save it and come back to it at a later date. This is also helpful if you and several friends are splitting up the job of entering a large program, each person will be able to say that what has been entered is correct.

To make sure that you have the entire program entered correctly, Enter type '&' symbol on its own. S-ENTRY will then calculate the S-ENTRY code for the program in memory, you can compare this with the final S-ENTRY code printed at the end of the listing.

ADVANCED USE

If you think you are good enough not to use the S-ENTRY system, you can simply enter the normal basic lines after the S-ENTRY code. But what if you get it wrong? Well S-ENTRY has a command that will produce a summary of the S-ENTRY code and the line number in memory; you can then compare this with the published S-ENTRY codes and thus track down the problem. This command is -LIST; you can pause the list by using the Shift/Shift Lock keys. The command will also accept a line number range, i.e. 100-200 or 200- etc.

The ONLY difference that S-ENTRY makes to the published listing is the addition of the four character code before the line number, and the addition of the final S-ENTRY code at end of the listing.

S-ENTRY COMMAND SUMMARY

- & Calculates the S-ENTRY code for the entire program in memory.
- @ Prefix to a basic command ie @DSAVE or @LOAD
- ! Remove S-ENTRY
- LIST Display S-ENTRY code summary, use shift/shift lock to pause.

YOU MUST

1. Use EXACTLY the same line numbers.
2. Enter the program exactly as printed, including all REMs.
3. Use EXACTLY the same commands, FULL command names MUST be used, ie '?' cannot be used instead of PRINT.
4. Remember to convert the easy enter codes ie [SP9] means type 9 spaces.
5. Type anything between " " (quotes) EXACTLY as published.

```

100 REM
110 REM*****
120 REM*
130 REM* CCI S-ENTRY *
140 REM*
150 REM* FOR THE C64 & C128 *
160 REM*
170 REM*(C)1989,A-ESKELSON & G.CATTLEY*
180 REM*
190 REM*****
200 REM
210 M1=256*PEEK(179)+PEEK(178):C8=65281:C9=C8-2:FA=250:FB=251:FC=252
220 POKE C8,00:REM IF 128 SET BANK 0
230 MC=M1+9:CC=0:FOR I=0 TO 61:READ ZZ
240 CC=CC+ZZ:POKE M1+I,ZZ:NEXT I
250 REM DATA FOR CRC
260 DATA 169,000,133,250,133,251,133,252,096,169,000,133,252,162,008,165
270 DATA 250,042,038,253,042,042,042,042,069,253,133,253,165,250,069
280 DATA 253,133,253,165,251,042,042,042,069,253,133,253,038,252,042,069
290 DATA 253,106,038,251,038,250,202,208,214,166,251,165,250,096
300 IF CC>9069 THEN PRINT"ERROR IN CHECKSUM DATA":STOP
310 REM
320 REM TEST FOR C128/C64
330 IF M1=2816 THEN C64=2:SA=3072:GOTO 360
340 IF M1=828 THEN C64=1:SA=49152:GOTO 360
350 PRINT"ERROR NOT C64 OR C128 ?":STOP
360 READ TC:EQ=0:EA=SA:SYS M1
370 HB=INT(SA/256):LB=0
380 REM START OF LOOP
390 READ DA:REM READ THE DATA
400 IF DA*="-9999" THEN 480:REM FINISHED ALL THE DATA
410 DA=VAL(DA*):PRINTSA:CHR*(145)
420 IF LEN(DA*)<>3 THEN 450
430 POKE SA,DA:SA=SA+1
440 POKE MC+1,DA:SYS MC:GOTO 390
450 AX=PEEK(FA):XX=PEEK(FB):CK=AX*256+XX
460 IF CK<>VAL(DA*) THEN EQ=1:GOTO 480
470 GOTO 390
480 IF EQ OR (CK<>TC) THEN 510
490 POKE FA,LB:POKE FB,HB:POKE FC,C64:SYS EA
500 PRINTCHR*(147):"S-ENTRY ACTIVE. TYPE 'NEW' TO CLEAR LOADER":END
510 PRINT"LINE/DATA ERROR IN LINE*":
520 PRINT PEEK(66)*256+PEEK(65):END
530 DATA 44232
540 DATA 024,165,250,105,028,133,176,165,251,105,002,133,177,169,000,170,48900
550 DATA 168,024,177,176,133,254,200,177,176,101,251,133,255,200,177,176,00903
560 DATA 201,255,240,008,024,101,251,129,254,200,208,229,024,165,250,105,18744
570 DATA 112,133,176,165,251,105,002,133,177,024,165,250,105,126,133,254,17087
580 DATA 165,251,105,000,133,255,162,000,164,252,177,176,072,161,176,240,44466
590 DATA 017,168,104,145,254,165,176,024,105,003,133,176,144,002,230,177,32098
600 DATA 208,230,104,169,000,141,005,003,169,126,141,004,003,169,000,133,49661
610 DATA 252,173,038,003,141,152,002,173,039,003,141,153,002,096,160,000,49456
620 DATA 132,251,132,250,132,180,132,254,132,253,185,000,002,201,032,208,52892
630 DATA 003,200,208,246,201,095,208,017,072,169,171,141,038,003,169,002,22812
640 DATA 141,039,003,032,154,002,104,208,053,072,173,152,002,141,038,003,55274
650 DATA 173,153,002,141,039,003,104,201,064,240,035,201,033,240,013,201,41233
660 DATA 038,208,033,076,068,001,173,141,002,208,251,096,169,067,141,005,20351
670 DATA 003,169,013,141,004,003,169,000,153,000,002,076,013,067,032,128,63881
680 DATA 003,024,144,247,165,252,240,007,169,000,133,252,024,144,236,132,15406
690 DATA 252,152,024,105,004,168,185,000,002,240,007,032,211,001,200,208,05629
700 DATA 245,000,164,252,162,001,185,000,002,072,169,032,153,000,002,104,21893
710 DATA 056,233,065,024,010,010,010,133,252,200,185,000,002,072,169,54075
720 DATA 032,153,000,002,104,056,233,065,041,015,005,252,213,250,208,011,11281
730 DATA 200,202,016,210,169,255,133,252,076,209,077,169,000,133,252,162,54224
740 DATA 022,108,000,003,162,001,181,045,149,176,202,016,249,141,001,255,56924
750 DATA 160,000,132,251,132,250,132,180,132,254,132,253,169,001,177,176,45691
760 DATA 240,040,200,177,176,032,211,001,200,177,176,032,211,001,200,177,58968
770 DATA 176,240,007,032,211,001,200,016,246,000,160,000,132,254,177,176,22791
780 DATA 170,200,177,176,134,176,133,177,208,210,160,000,140,000,255,185,63767
790 DATA 154,001,240,022,032,210,255,200,208,245,083,045,069,078,084,082,26008
800 DATA 089,032,067,079,068,069,032,061,032,000,162,001,181,250,072,041,42873
810 DATA 240,074,074,074,074,024,105,065,032,210,255,104,041,015,024,105,62214
820 DATA 065,032,210,255,002,016,229,141,003,255,169,000,141,000,002,076,51028
830 DATA 222,000,096,201,034,200,009,072,165,254,073,255,133,254,104,201,08627
840 DATA 032,208,004,036,254,016,052,133,180,169,001,072,165,251,041,128,08832
850 DATA 042,038,253,165,251,041,008,106,106,106,069,253,133,253,165,251,26391
860 DATA 069,253,133,253,165,250,042,042,042,069,253,133,253,038,180,042,59214
870 DATA 069,253,106,038,250,038,251,104,010,144,208,096,100,000,000,197,16654
880 DATA 000,001,253,000,001,103,001,001,109,001,001,117,001,001,145,001,10659
890 DATA 001,209,001,000,118,000,002,124,000,002,159,000,002,165,000,002,52822
900 DATA 172,000,002,178,000,002,211,002,002,001,003,002,010,003,002,019,14849
910 DATA 003,002,035,003,002,050,003,002,028,003,002,231,002,002,222,002,52909
920 DATA 001,047,003,002,194,002,002,200,002,002,042,003,000,255,255,04528
930 DATA 079,165,067,084,124,013,094,124,013,095,165,067,201,043,045,097,06351
940 DATA 115,128,098,000,003,187,138,209,188,164,077,073,141,211,074,002,22835
950 DATA 000,000,064,064,064,064,032,000,000,160,000,132,251,132,250,37171
960 DATA 132,180,132,254,132,253,177,132,176,096,134,182,132,181,201,46369
970 DATA 013,240,054,166,177,208,037,201,058,176,038,201,046,208,016,072,22106
980 DATA 173,152,002,141,038,003,173,153,002,141,039,003,104,208,018,164,50064
990 DATA 176,153,146,002,230,176,201,032,208,002,230,177,032,211,001,169,15787
1000 DATA 001,166,182,164,181,188,152,002,096,164,177,240,244,169,002,072,30286
1010 DATA 168,136,185,250,000,072,041,240,074,074,074,024,105,065,032,48296
1020 DATA 225,002,104,041,015,024,105,065,032,225,002,104,074,144,224,169,27482
1030 DATA 061,032,225,002,169,000,133,176,164,176,185,146,002,201,032,244,17276
1040 DATA 007,032,225,002,230,176,016,240,032,198,000,169,013,032,154,002,25087
1050 DATA 076,225,002,255,44232,-9999

```

CONTINUED FROM LAST MONTH

Conversion

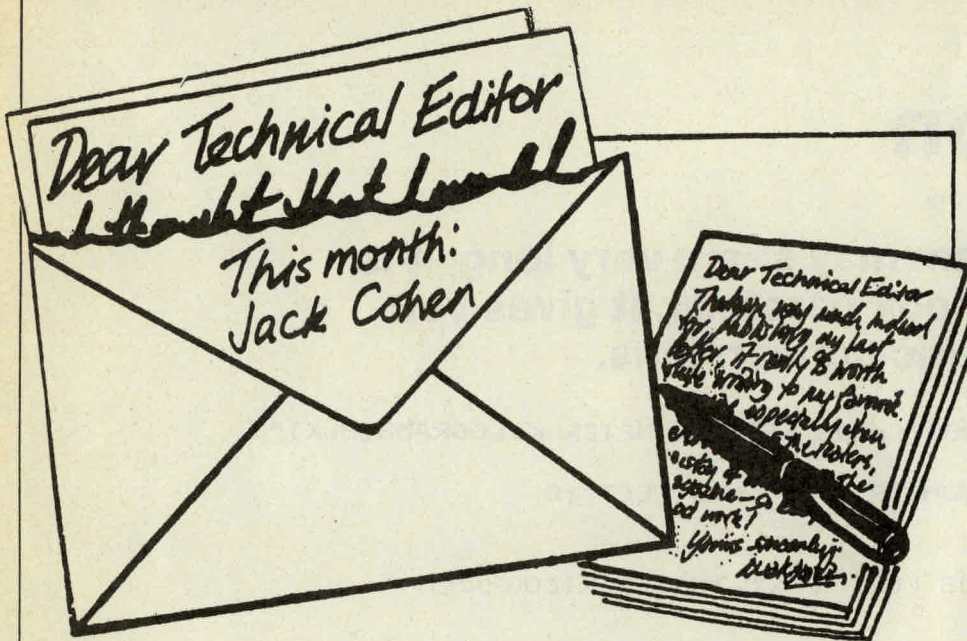
Cpl D. Baillie C64, C128, +4

Although the program may seem very long, it is easy to enter if you look carefully. It gives you many types of numeric conversions.

```
NBLI 7150 PRINT"[CLR]"
JHIL 7160 PRINT"[RED][CR5]POUNDS FEET TO METER KILOGRAMS[BLK]"
IIMK 7170 PRINT:PRINT
FPEC 7180 INPUT" ENTER NUMBER OF POUNDS FEET";C
JILC 7190 PRINT:PRINT
CICM 7200 CC=C*0.13826
EBNL 7210 PRINT C "POUNDS FEET = "CC "METER KILOGRAMS"
KKAC 7220 PRINT:PRINT
EOIJ 7230 D1$=""
LANF 7240 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
GJEI 7250 PRINT:PRINT" 1-ANOTHER CONVERSION"
CAGA 7260 PRINT" 2-RETURN TO 'LOAD' MENU"
JNMC 7270 PRINT" 3-RETURN TO 'MAIN' MENU"
FOLC 7280 GET D1$:IF D1$="" THEN 7280
EJCF 7290 IF D1$ <"1" OR D1$ >"3" THEN 7280
FJNA 7300 IF D1$="1" THEN 7150
BCHI 7310 IF D1$="2" THEN 6460
IDNM 7320 IF D1$="3" THEN 100
BPEA 7330 PRINT"[CLR]"
IBPM 7340 PRINT"[RED][CR13]PRESSURE [BLK]"
PAPB 7350 PRINT:PRINT
LMDE 7360 PRINT" WHICH CONVERSION DO YOU WANT?"
CNFE 7370 PRINT:PRINT
HLOK 7380 PRINT" 1-KGRMS SQ C/MTR - POUNDS SQ INCH"
FKON 7390 PRINT" 2-BAR - POUNDS SQ INCH"
LKJO 7400 PRINT" 3-ATMOSPHERE - POUNDS SQ INCH
DAHC 7410 PRINT
LMJB 7420 PRINT" 4-POUNDS SQ INCH - KGRMS SQ C/MTR
PBDJ 7430 PRINT" 5-POUNDS SQ INCH - BAR
DBLJ 7440 PRINT" 6-POUNDS SQ INCH - ATMOSPHERE
MMJM 7450 PRINT:PRINT
OEMK 7460 B$=""
MNBC 7470 PRINT" SELECT ONE BY PRESSING THE APPROPRIATE[SP2]NUMBER (1-6)";B$
GLCE 7480 GET B$: IF B$="" THEN 7480
BKGO 7490 IF B$ <"1" OR B$ >"6" THEN 7480
AMCM 7500 ON VAL (B$) GOTO 7510,7690,7870,8050,8230,8410
OCIE 7510 PRINT"[CLR]"
CIMJ 7520 PRINT"[RED][CR3]KGRMS SQ C/MTR TO POUNDS SQ INCH[BLK]"
HILN 7530 PRINT:PRINT
HPMN 7540 INPUT" ENTER NUMBER OF KGRMS SQ C/MTR";C
BOFD 7550 PRINT:PRINT
OPJD 7560 CC =C *14.22334
HOFL 7570 PRINT C "KGRMS SQ C/MTR = "CC "POUND SQ INCH"
DNFM 7580 PRINT:PRINT
GFHK 7590 D1$=""
BFBJ 7600 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
NAEN 7610 PRINT:PRINT" 1-ANOTHER CONVERSION"
IDOA 7620 PRINT" 2-RETURN TO 'PRESSURE' MENU"
NIII 7630 PRINT" 3-RETURN TO 'MAIN' MENU"
DIBF 7640 GET D1$:IF D1$="" THEN 7640
IMNF 7650 IF D1$ <"1" OR D1$ >"3" THEN 7640
```

Continued next month

Hints and Tips



Dear Technical Editor,

Please can you help me? I have just had a new tape head fitted to my C2N cassette deck for my C64 and I just cannot get the setting right, so now I cannot load any games.

Can you please tell me if there is any software or listing that I can use to help me set the new head?

I hope that you can help me.

Best wishes,

Helpless Lee, Lancashire

Dear Helpless Lee,

Tape head alignment software is available. Why don't you try our advertisers or Supersoft on 01-861-1166.

If your new tape head was fitted by an experienced repairer then the alignment check should have been carried by the repairer. If this is the case then first contact the repairer.

Dear Technical Editor,

Two years ago my father bought an Oceanic Disc Drive. With it came a Freeze Machine. The Freeze Machine is almost useless. The only thing that works at all is the "Freeze" and this only works with certain games.

Two years later we bought a KCS Power Cartridge. The Power Cartridge functions all work except that some programs will not load with the Power Cartridge in. Some of these programs have been mentioned in "Horgans Hints" using a reset poke. Neither of the two cartridges could do anything (we had the Freeze Machine renewed twice). Please could you explain this.

Yours sincerely,

James Windmill, Gloucs.

Dear James,

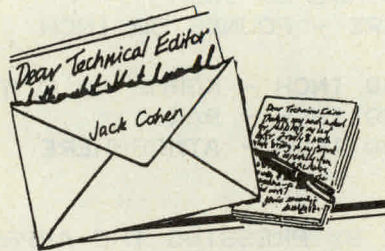
Some programs are protected in such a way that they check for the presence of code from \$C000, or

checking for CBM autoboot code in the same area. This type of program will not continue with the load once a cartridge is detected.

What happens is that some code is loaded and executed and it will not load the main code in the above circumstances.

The code will perhaps also check the disk ROM and find a slight difference from a 1541 and the abort loading.

Most software creators will not use these methods any longer and they rely on the law to deter wouldbe pirates. I suggest that you check this when looking at software and refuse to buy the older kind when you have a non-standard disk drive.



Dear Technical Editor,

Can you or any one out there help me? I have a fault with my GEOS system, operating on a C64.

GEOS Version 1.2

On booting the system using disk one, the system boots up to show the control window, then a window apperas with the following,

BOOT DISC ERROR 1.23

DRIVE A TRACK 0B

SECTOR 0B

HEX

at the bottom O K

I point the pointer to O K then press, the system then proceeds to reboot showing the same error message. If I point and press again, nothing. I can then exit the boot program by going to

the disk command and close the disk. I can then load my next disk.

New fault, at the bottom of the page that I am writing on GEOS if the letters are CAPITALS the error message SYSTEM ERROR NEAR \$2024 appears. These faults are recent.

I contacted Microprose Software by phone, and they tell me that they no longer are agents for GEOS and to contact a firm called Microdealer on 0908 374000, guess what, they are no longer agents for GEOS, and have no idea who is. Have you or any of your readers come across these faults before, or can anybody tell me who I can get information from.

I see from your magazine that a firm calling itself F S S L is selling GEOS, is it possible they would know of anybody, as I see they are selling GEOS V2.0.

Please find a stamped addressed envelope for hopefully an answer if this letter is not published.

Yours faithfully,

E.G. Walton, Powys

Dear E.G. Walton,

I understand that the GEOS system worked correctly for some time, and then gradually developed some faults. It may be that your disk has gone slightly out of adjustment and it is, perhaps, getting worse.

Check this by loading standard software (not your own) without using GEOS.

If your disk proves to be in alignment then disk one has corrupted slightly.

In this case you may be able to obtain an exchange diskette, with a small payment, from FSSL.

Dear Technical Editor,

I am writing to see if you could help me, I bought a Commodore VIC 20 starters pack for my little girls aged 8 some years ago. My wife and I separated last year, she went to stay with her mother. We decided she could take the computer to her mothers, my wife died 6 weeks ago in a car accident, I now have my daughter staying with me, and she brought her VIC 20 with her, but we can't find the instructions for it. If I have to pay for Postage thats OK as I want to help my daughter get into computers now, as it will benefit her in years to come (ie Jobs, etc.) Thankyou for reading this letter,

Hope you can help,

Mr L.Turnbull, Scotland

Dear L. Turnbull,

You have not mentioned which type of instructions are needed.

Is it to program in BASIC on the VIC 20? Or just simple instructions on how to load a cassette.

These instructions are usually on the cassette tape box. However if the

BASIC language instructions are required then I suggest that you first try your local public library for suitable simple books.

If you cannot obtain one on the VIC 20, or a CBM BASIC (64 and similar types) then one on a common BASIC will do.

Some commands will not work but most will, at least enough to get your daughter started.

Dear Technical Editor,

Please find enclosed a program I typed in from the Commodore magazine about two dozen times. And every time it comes up with syntax error in line 60 which I cannot find.

As I am a retired old age pensioner I would be very grateful for your help. The program is supposed to draw a pencil on the screen, thanking you for your co-operation,

I remain

Yours sincerely,

Mr. F.J. Hughes, Lincs.

Dear F.J. Hughes,

The syntax error in line 60 is that you should put an operator (/, +, -) between P1 and 180. Check the original listing for the correct one.

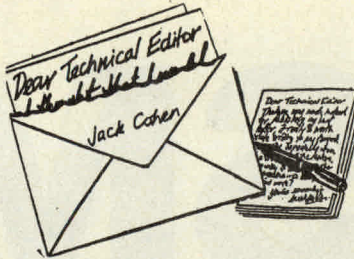
If a misprint then try different ones until you get the predicted result. Other errors that will prevent the program running correctly are:- GRAPHIC1,1 should be GRAPHIC 1,1 in line 90.

The required closing bracket in line 90 after Y(Z,N has been left out. Other points to note are that 'V' is defined in line 10 but is never used, at least in the copy you sent. The program has no exit routine, but goes around a loop indefinitely.

My suggestion is that you compare the original listing of this program very carefully with your copy. Find out what else has been omitted or misread and correct these errors. I have assumed, in the absence of info, that this program is for C16, +4 or C128, from the commands DRAW and GRAPHIC.

Will readers please note that it is a great help to know which computer is being used, unless the program is of a very simple kind and does not use commands specific to the machine.

I would appreciate, beside a program listing, a copy on cassette tape or disc. This makes debugging a lot easier. Brian has some help for 128 owners without access to a dedicated monitor.



Dear Technical Editor,

I have a Commodore 64 with an OC-118N Disk Drive, and I am having great trouble programming relative files.

I am wanting to store a file of names and addresses for a business I am starting and this problem is holding up no end.

The problem lies in the fact that I cannot save fields within a record, each field going into a new disk record.

For example, field 1 of program record 1 (F1 of PR1) goes into disk record 1 (DR1), F2 of PR1 into DR2, F3 into DR3 etc. When I come to PR2, F1 goes into DR2 overwriting F2 of PR1, F2 of PR2 into DR3 overwrites F3 of PR1, etc. F1 of PR3 overwrites F2 of PR2 etc, etc. At the end of the program what is on the disk is a whole series of the first fields of all the records except the last which is complete.

What is wrong with the instruction:- PRINT#15,"P" CHR\$(2) CHR\$(1) CHR\$(12) CHR\$(X) where I1=(rec. no. - (256*12)), I2=INT(rec no./256) and X is the accumulative length of all the fields already saved to the file?

I do hope you can help me, Yours desperately,

F.K. Patterson

Dear F.K. Patterson,

The way that you have dealt with the pointer CHR\$(X) is wrong. This pointer allows division of a RECORD into several fields. Normally the value is 1 (ie CHR\$(1) so that the first field starts at the first position in the record.

Suppose you PRINT#2,Y\$ to the disk, where Y\$ is a field, and you make X=50 say. If you then PRINT another field into that record where X=30 then this will overwrite all information until the end of the record, and this includes Y\$.

To summarise, when information is sent to the same record then the record is replaced from the position of the pointer until record end.

Suppose that the first field is 20 characters long and X=1 then one can PRINT this to the disk.

The next field must start from position 21 or later and not over run the length of the record. (maximum in any case is 254 characters for the whole record.) Another way of doing this is to concatenate all the fields into one string.

Syntax R\$=A\$+B\$+C\$+D\$ etc where A\$="John Smith" and so on.

Then set X at 1 and PRINT#2,R\$ (assuming that OPEN 2,8,2 etc has previously been set in the program.

Dear Technical Editor,

I am an Amiga 500 owner with a problem.

I have recently bought a Star LC 24-10 printer and find that the fonts available through this printer are better than the fonts available through the software I currently own, ie Kindwords.

Can you please advise me how I print a letter, or any other doc using the fonts available through the printer as opposed to those available through the Workbench 1.3 or Kindwords.

Your assistance in this matter is greatly appreciated,

Yours sincerely,

D.I. Pinder

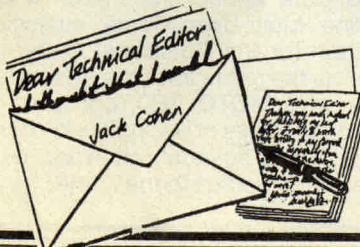
Dear D.I. Pinder,

You need a printer driver for the new printer. Check if 'KindWords' have an update, although this is unlikely since they cannot be expected to change a program for every new printer that is produced.

Printers that exist at the time that the software is created should cater for most popular printers.

I suggest that you contact Rob Pepper of Star Micronics Technical Help Dept on 0494-471111 (High Wycombe) who may be able to help you.

Dear Readers,
We know you've got news and views. We know you've got ideas and opinions. We know you've got gripes and criticisms.
So why not let everyone know?
Send us your thoughts (printable ones please!) and we'll include them on our letters page.
Write to us at 40 Bowling Green Lane London EC1R ONE - SOON!
Yours,
C.C.I.



COSMOS

Want to know all the Dr Who's ever made, when the next super nova is or when the Trekkien meet? Jonathan Littlewood reports

Cosmos is the Science Fiction, Fantasy and Astronomy section of the Compunet Online Database. It might seem strange to mix science fiction with science fact but in practice the result is quite effective.

GOTO COSMOS take the user to the main directory of the COSMOS area where an index of its pages is regularly updated by the Compunet host computer. Currently the index runs to twelve pages and lists over four hundred screens of text as well as a few programs and IFF pictures.

The Astronomy sub-section (GOTO ASTRO) contains directories of space art, astronomy programs for the Commodore C64 and a variety of text sections. The newest of the text based sections is 'The Astronomer' run by the editor of the magazine of the same name. Although currently only a few pages this section promises to be one of the most important in the area. Under consideration is a scheme whereby news of astronomical discoveries will be issued on Compunet. This scheme is already running on two other British

"Playing about with this program soon leads to a real sense of perspective about what a tiny place this world is when compared with the rest of the solar system."

online systems and allows professional and amateur astronomers alike the chance to see short-lived and unpredictable phenomena such as super-nova.

In the space art directory there are both low and hi-res pictures for the C64. The low-res pictures can be displayed online as Compunet frames while the hi-res pictures are in the form of programs that need to be downloaded and run after logging off.

The Astronomy program area con-

tains C64 programs to predict times of sunrise and sunset (there is rather more to this than meets the eye!), predict eclipses and take the user on a guided tour of the solar system. The latter is very educational showing the relative sizes and positions of the planets and asteroids and their orbits. Playing about with this program soon leads to a real sense of perspective about what a tiny place this world is when compared with the rest of the solar system.

The 'Other Worlds' sub-directory contains some twenty pages theorizing on the possibility of intelligent life in other solar systems. It explains how life is quite possible on other planets, how astronomers are searching for signs of other advanced civilisations and puts forward some UFOlogists arguments. The writer has managed to provide some very interesting food for thought without taking sides in this argument.

The remainder of the sub-sections of the main COSMOS directory cover a variety of Science Fiction media, from cult series such as Blake's Seven to the latest Star Trek movie, from science fiction book reviews to a weekly Sci-Fi news section.

The Sci-Fi reviews directory (GOTO SCIFI) contains a wealth of book reviews. New reviews are uploaded in the main SCIFI directory by a number of Cnetters whilst the Reviews Archive (GOTO SFA) is a database of older reviews. Organising the archive in such a way that all the books by one author are reviewed in one sub-directory has proven to be very useful. Having just finished reading Orson Scott Card's 'The Abyss' I was able to nip into the relevant sub-directory (GOTO 471759) and check out some reviews of some of his other works.

ROVER is a weekly look at Science Fiction and Fantasy on the box. A cleverly coded programme guide lists each Sci-Fi film and TV series on both national and regional channels in Britain. Each entry identifies the programme's country of origin, year of production and

even whether it is colour or mono, plus enough information to set up the video recorder appropriately.

ROVER is a major piece of work as typically there are about thirty Sci-fi programmes shown weekly in the UK. Gathering together all the relevant information and adding the odd review is proving a very useful service.

Within the COSMOS area, separate ***"In the Star Trek (GOTO TREK) directory details of the new 'Star Trek, The New Generation' series can be found along with news of forthcoming Trekker meetings."***

sub-directories are provided for the main cult Sci-Fi television series. The Dr Who (GOTO DRWHO) area contains lists of all programs made and some discussion of the latest episodes. In the Star Trek (GOTO TREK) directory details of the new 'Star Trek, The Next Generation' series can be found along with news of forthcoming Trekker meetings.

Of all the directories in the COSMOS area my favourite is also the last. GEP2's Mind's Eye directory (GOTO MINDS) contains yet more well written reviews along with some very original Science Fiction short stories. One of the beauties of the Compunet system is that it allows new writers to get their works read and to get feedback from their audience both through the voting system and electronic mail.

No description of the extraterrestrial parts of the Compunet database would be complete without mentioning the Fed Data Space. Federation II is an online Multi-User Game specifically written for the Compunet system. As well as the game itself the Federation II directory (GOTO FED) contains hundreds of pages of background information, news, scandal, art work, music, maps and guides to the game. **J.M.L.**

SUPER 72

Erik H Bakke C64

This program displays 72 sprites on the screen at the same time. As it is fairly short, it can be easily used with your own programs.

```
HAEP 10 FOR A=0 TO 47:READ B:POKE 49152+A,B:NEXT
IJDB 20 FOR A=0 TO 7:POKE 2040+A,13:NEXT:FOR A=0 TO 63
ENKO 30 POKE 832+A,255:NEXT:V=53248:POKE V+32,0:POKE V+21,255
HNAL 40 POKE V+6,100:POKE V+29,0:POKE V+2,50
NLJD 50 POKE V+46,15:POKE V+45,4:POKE V+4,75:POKE V,25
GMML 60 POKE V+12,175:POKE V+14,200:POKE V+28,0
JHFA 70 POKE V+17,27:POKE V+27,0:POKE V+39,3
IDDN 80 POKE V+40,10:POKE V+41,2:POKE V+42,12
MMOH 90 POKE V+43,8:POKE V+44,5:POKE V+8,125
BPMD 100 POKE V+10,150:POKE V+23,0:POKE V+33,0
FFOL 110 PRINT"[CLR][WHT]",,,"SUPER 72",,,"72 SPRITES":SYS49152
CKEO 120 DATA 120,173,018,208,201,000,240,003,076,001
FHCE 130 DATA 192,174,018,208,232,142,001,208,142,003
DGNI 140 DATA 208,142,005,208,142,007,208,142,009,208
IBLE 150 DATA 142,011,208,142,013,208,142,015,208,238
FKML 160 DATA 005,192,238,005,192,076,001,192
S-ENTRY CODE = HOBG
```

TEAM DRAW

Ian Brown C64

A short program which can replace the old "drawing numbers from a bag" used for football competitions.

```
INOF 1 POKE53281,5:POKE53280,5:PRINT"[CLR][YEL]"
CHGK 2 PRINT"[SP5]PROGRAM TO PICK RANDOM NUMBERS"
CEFN 3 PRINT"[CD][SP6]FOR TEAMS TO PLAY EACH OTHER"
AMLJ 5 PRINT"[BLU]"
LMGK 6 PRINT"[HOM][CD8]TYPE A LETTER FOR EACH TEAM[CD]":INPUTW$
FKMP 10 FORN=LEN(W$)TO1STEP-1
KOGK 11 M=INT(RND(1)*N)+1
KDAE 12 A$=A$+MID$(W$,M,1)
MCHO 13 W$=LEFT$(W$,M-1)+RIGHT$(W$,LEN(W$)-M)
NAGH 14 NEXTN
CFLI 15 PRINT"[CLR][CD6]"
LBLB 16 L=1:R=2
PFGB 20 FORT=1TOLEN(A$)/2
GNGD 21 FORN=1TO10000:NEXTN
CEEL 22 PRINT"[BLU][CD][CR]TEAM [WHT]":PRINTMID$(A$,L,1):PRINT"[SP2][BLU] V[SP
3]TEAM [WHT]":PRINTMID$(A$,R,1)
DANE 23 L=L+2:R=R+2
BMKB 25 NEXTT
KKFF 30 FORT=1TO6000:NEXTT
BFME 32 FORT=1TO1000:NEXTT
AHNL 35 PRINT"[HOM][CD][SP2][YEL][SP11]PRESS A KEY"
LDNG 40 GETC$:IFC$=""THEN40
DADK 45 PRINT"[CLR]"
S-ENTRY CODE = HOFE
```

AUTO. CONFIG

Stephen Hardcastle C128 with 1541, 1570 or 1571

Two short programs for the C128. The first **CONFIG.128** is a program to configure your C128 to your preferred settings, screen mode, colours and function key actions. This program can contain any Basic code you wish, only the program name must remain.

The second program **AUTO. CONFIG** uses the C128 autoboot feature to automatically run the program **CONFIG.128** on power up.

HOW TO USE

Enter the programs and save to disk. Then place a blank disk in drive number 8, and run **AUTO.CONFIG**.

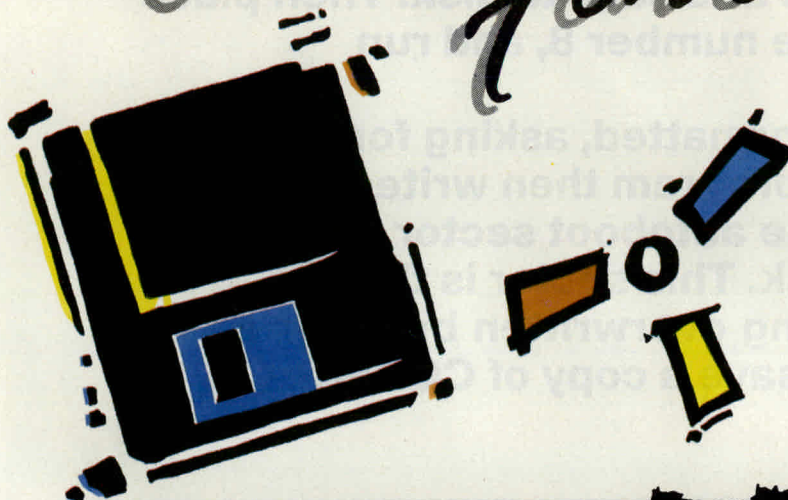
First the disk is formatted, asking for the disk **NAME** and **ID**. The program then writes the required code to the autoboot sector (track 1, sector 0) on the disk. This sector is then protected from being overwritten by other data.

You should now save a copy of **CONFIG.128** to this disk.

```
10 REM-----
20 REM
30 REM PROGRAM NAME = CONFIG.128
40 REM
50 REM PURPOSE      = SET C128 TO PREFERED CONFIGURATION
60 REM
70 REM-----
80 FAST
90 GRAPHIC 5
100 SCNCLR 5
110 COLOR 6,1
120 COLOR 5,14
130 KEY 1 ,"DSAVE" + CHR$(34)
140 KEY 2 ,"DLOAD" + CHR$(34)
150 KEY 3 ,"AUTO"
160 KEY 4 ,"RENUMBER"
170 KEY 5 ,"TRON" + CHR$(13)
180 KEY 6 ,"TROFF" + CHR$(13)
190 KEY 7 ,"LIST" + CHR$(13)
200 KEY 8 ,"DIRECTORY" + CHR$(13)
210 DIRECTORY
220 NEW
230 END
860 REM-----
870 REM
880 REM END OF PROGRAM CODE
890 REM
900 REM-----
```

EVERYTHING FOR YOUR ST & AMIGA UNDER 1 ROOF

The 16 Bit Computer Fair



12-13-14 JANUARY 1990

ROYAL HORTICULTURAL HALLS,
VICTORIA, LONDON

SAVE 50%!

Save 50% by Pre Purchasing your Fast Lane ticket

— THE FIRST 50 APPLICANTS FOR TICKETS WILL RECEIVE THEIR MONEY BACK —

REGULAR TICKET PRICE £4 **FAST LANE TICKET £2** CHILDREN UNDER 10 ADMITTED FREE

Post to: THE 16 BIT COMPUTER FAIR, PO BOX 68, ST AUSTELL, PL25 4YB

Please send me FAST LANE TICKETS at £2 each

Cheque/PO enclosed for £..... NAME _____

ADDRESS _____

POST CODE _____

or phone 0726 68020 with your credit card number



FOR FURTHER INFORMATION
CONTACT:
WESTMINSTER EXHIBITION LTD
SURREY HOUSE
34 EDEN STREET
KINGSTON
SURREY KT1 1ER
PHONE: 01-549-3444
FAX 01-547-1311

The New Hacker's Handbook

by Steve Gold
by (Century Hutchinsonson Ltd. £9.99)

In the world of on-line communications there cannot be many people who have not heard of Steve Gold. His is a name which can strike fear into the heart of any Sysop worth this title. Mr Gold was — along with Robert Schifreen — directly linked to the hacking of Prince Philip's mailbox on Prestel. Applying his not inconsiderable talents, the illustrious Mr Gold has now turned his attention to less deviant pursuits and completely revised the *de facto* guide to modem communications — Hugo Cornwall's, *Hacker's Handbook*.

When the original text appeared in 1984 it was hailed as everything from "the answer to a hacker's prayers" to "a final end to data security." Needless to say it was none of those, it was a genuinely brilliant introduction to the world of electronic data communications. Mr Cornwall's preface to the fourth edition supports this, and ends by concluding most hack-

ing is preventable — more by thought than draconian legal action. Nevertheless, using the word "Hacker" in the title ensured the book achieved instant notoriety and therefore deservedly massive sales.

In this new revision, Mr Gold has set a precedent, so-to-speak, by expressing the need for hacking and telling everyone how to go about it. He openly admits to hacking himself, referring to the practice almost glibly as a hobby carried out by individuals for personal gratification. He does, however, discourage the potential hacker from selling knowledge he has gained to the tabloid press. While it may boost the ego of the individual concerned, cheap sensationalism of a hacker's exploits could do irreparable damage to a company's reputation; on your head be it.

Caveats aside, the main body of text concerns itself with the whole world of computer communications,

the principles involved and how it all works. Although the information provided could be used by some individuals for personal gain (as is proven by the liberal smatterings of hacker's comments) nothing secret is revealed. This is purely a collection of wisdom joined by Mr Gold's easily readable — and frequently lively — style; all a far cry from normal academic literature. The same could not be said of the language employed by some of the hacking elements whose unexpurgated communiques are reproduced here — do not leave this on Auntie Flora's favourite chair!

Topics covered are wide and varied. From the public BBSs like Prestel and Microlink, to hacking holes-in-the-wall, to the private BBS systems employed by governments; from the sort of equipment you need to get started — to the equipment needed to decode RTTY transmissions from ships etc. In closing, a set of useful appendices should answer most of the questions you are likely to ask. This is a book which deserves pride of place on the bookshelf of anyone — even those slightly interested in communications. If you have a modem, this book is an absolute must — and at under £10 for 194 pages, it is a steal ...

M.S.

WIN... WIN..... WIN..... WIN.....

We were so impressed with the *Hacker's Handbook*, we decided we wanted to share it with you guys and gals.....

The book itself is an absolutely essential prop to anyone interested in computers, and if you hurry one of these vital editions could be the next addition to your library — **ABSOLUTELY FREE !!!!!**

Just answer the following simple(?) questions, and the first five correct entries will receive their own special copy of the *Hackers Handbook* ! Oh — and yes — you also have to complete the tie breaker so get your creative cap on and stun us all !!

1. From where could you receive a RTTY transmission (ie. ritty?)
2. Steve Gold was partly responsible for hacking into Prince Philip's Prestel Mail box. With whom did he conspire to do it ?
3. Who wrote the original *Hacker's Handbook* ?
4. Complete the following in no more than 12 words.
A Hacker is

Answers on a post card please to reach us no later than February 15th,

CCI
40 BOWLING GREEN LANE
LONDON
EC1R 0NE

Programs

```
NBL 7150 PRINT"[CLR]"
JHIL 7160 PRINT"[RED][CR5]POUNDS FEET TO METER KILOGRAMS[BLK]"
IIMK 7170 PRINT:PRINT
FPEC 7180 INPUT" ENTER NUMBER OF POUNDS FEET";C
JILC 7190 PRINT:PRINT
CICM 7200 CC=C*0.13826
EBNL 7210 PRINT C "POUNDS FEET = "CC "METER KILOGRAMS"
KKAC 7220 PRINT:PRINT
EOIJ 7230 D1$=""
LANF 7240 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
GJEI 7250 PRINT:PRINT" 1-ANOTHER CONVERSION"
CAGA 7260 PRINT" 2-RETURN TO 'LOAD' MENU"
JNMC 7270 PRINT" 3-RETURN TO 'MAIN' MENU"
FOLC 7280 GET D1$:IF D1$="" THEN 7280
EJCF 7290 IF D1$ <"1" OR D1$ >"3" THEN 7280
FJNA 7300 IF D1$="1" THEN 7150
BCHI 7310 IF D1$="2" THEN 6460
IDNM 7320 IF D1$="3" THEN 100
BPEA 7330 PRINT"[CLR]"
IBPM 7340 PRINT"[RED][CR13]PRESSURE[BLK]"
PAPB 7350 PRINT:PRINT
LMDE 7360 PRINT" WHICH CONVERSION DO YOU WANT?"
CNFE 7370 PRINT:PRINT
HLOK 7380 PRINT" 1-KGRMS SQ C/MTR - POUNDS SQ INCH"
FKON 7390 PRINT" 2-BAR - POUNDS SQ INCH"
LKJO 7400 PRINT" 3-ATMOSPHERE - POUNDS SQ INCH
DAHC 7410 PRINT
LMJB 7420 PRINT" 4-POUNDS SQ INCH - KGRMS SQ C/MTR
PBDJ 7430 PRINT" 5-POUNDS SQ INCH - BAR
DBLJ 7440 PRINT" 6-POUNDS SQ INCH - ATMOSPHERE
MMJM 7450 PRINT:PRINT
OEMK 7460 B$=""
MNBC 7470 PRINT" SELECT ONE BY PRESSING THE APPROPRIATE[SP2]NUMBER (1-6)";B$
GLCE 7480 GET B$: IF B$="" THEN 7480
BKGO 7490 IF B$ <"1" OR B$ >"6" THEN 7480
AMCM 7500 ON VAL (B$) GOTO 7510,7690,7870,8050,8230,8410
OCIE 7510 PRINT"[CLR]"
CIMJ 7520 PRINT"[RED][CR3]KGRMS SQ C/MTR TO POUNDS SQ INCH[BLK]"
HILN 7530 PRINT:PRINT
HPMN 7540 INPUT" ENTER NUMBER OF KGRMS SQ C/MTR";C
BOFD 7550 PRINT:PRINT
OPJD 7560 CC =C *14.22334
HOFL 7570 PRINT C "KGRMS SQ C/MTR = "CC "POUND SQ INCH"
DNFM 7580 PRINT:PRINT
GFHK 7590 D1$=""
BFBJ 7600 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
NAEN 7610 PRINT:PRINT" 1-ANOTHER CONVERSION"
IDOA 7620 PRINT" 2-RETURN TO 'PRESSURE' MENU"
NIII 7630 PRINT" 3-RETURN TO 'MAIN' MENU"
DIBF 7640 GET D1$:IF D1$="" THEN 7640
IMNF 7650 IF D1$ <"1" OR D1$ >"3" THEN 7640
FONB 7660 IF D1$="1" THEN 7510
IGIP 7670 IF D1$="2" THEN 7330
FHCC 7680 IF D1$="3" THEN 100
CHHH 7690 PRINT"[CLR]"
BIDP 7700 PRINT"[RED][CR8]BAR TO POUNDS SQ INCH[BLK]"
AAIG 7710 PRINT:PRINT
IGIJ 7720 INPUT" ENTER BAR";C
NNCD 7730 PRINT:PRINT
CJEC 7740 CC =C *14.504
KFBI 7750 PRINT C "BAR = "CC "POUND SQ INCH"
IILK 7760 PRINT:PRINT
```

Continued next month

THE NEW ENCYCLOPAEDIA OF SCIENCE FICTION

Edited by James Gunn (Viking Books £17.95)

Science Fiction has, in the past four or five decades, become one of the most popular forms of escapist entertainment.

Films like 'Star Wars', 'Close Encounters of the Third Kind' and 'E.T.', TV series such as 'Hitchhikers Guide To The Galaxy', 'Star Trek' and 'Dr Who', have all combined to bring SF to the notice of a public which, if it thought of science fiction at all, probably thought of it as the brainchild of H.G. Wells, for the film treatments of 'War Of The Worlds' and 'Things To Come', which turn up on T.V. with great regularity.

Books, films, stage musicals, computer games have all contributed to SF's popularity and, in some universities in the United States, a degree course in the subject can be taken.

Authors Arthur C. Clarke, Isaac Asimov, Brian Aldiss are as well-known now as many other best-selling 'names' and their books sell not only as well but, in many cases, also for far longer than some of the writers of conventional fiction.

Some years ago Brian Aldiss, with David Wingrove, wrote the 'Billion Year

Spree' – later up-dated to the 'Trillion Year Spree' – which was a History of Science Fiction that all enthusiasts rushed to buy. There was also a SF encyclopaedia, edited by Peter Nicholls, but, to my knowledge, there has never yet been such an all-encompassing encyclopaedia of SF as this.

'The New Encyclopaedia of Science Fiction', published by Viking Books at £17.95, is edited by James Gunn, himself an author of no mean ability, and is full of facts about the writers, the books, the films, the talents, all the many ingredients that go to make up the world of SF. But what makes this book so special is that the entries are not just the work of one man. There are contributions from over one hundred of SF's biggest and brightest stars, ranging from Aldiss on Alternate Worlds to H.G. Wells as seen by Arthur C. Clarke.

There are critiques of the myriad SF films, which also list their directors, producers, photographers, stars, even composers of the music; information on the many magazines which, in their time, have catered to the needs of SF fans; how the differing divisions of SF –

cyberpunk, fantasy, cosmology, eschatology, (What's that? Read this book and you'll find out!), to name but a few – all fit in to the glittering whole.

Just to dip into it at random can bring to light fascinating facts. For example Gene Autry, the original singing cowboy of 'B' movies, once made a SF film called – would you believe? – 'Gene Autry and the Phantom Empire', which was later made into a serial. What makes the film even more notable, if that's the word, is that it also had two other titles, 'Radio Ranch' and 'The Men With Steel Faces'. How any one of these titles can be compatible with the others is a mystery in itself.

The book is well illustrated too, with author photos, art-work and examples of magazine and book cover designs in both black and white and colour. And if you think that SF is devoid of glamour take a look at the colour drawing by Michael Whelan, (seven times Hugo Award winner for illustration), for the late-lamented Robert A. Heinlein's book 'Friday'.

When Mary Shelley wrote 'Frankenstein' she unleashed a fictional character that has now lived on for over one hundred and seventy years. The genre she created has now come of age and this encyclopaedia is a fitting and authoritative tribute to its development.

D.M.

COGNIZERS

by R. Colin Johnson & Chappell Brown
(John Wiley & Sons £14.95/\$22.95)

The thought processes of the human brain are complex and impossible to duplicate. Computers are becoming ever more sophisticated but even the fifth generation cannot match, as yet, the rapidity of the neural network contained inside our skulls.

What we call 'thought' is the end product of electrical impulses passing a chemical message from one set of nerve cells to another. The brain distributes its processing tasks among billions of those nerve cells called neurons, which constantly send and receive information.

Until fairly recently the only computers able to mimic the brain's amazing ability, and then only in a partially successful way, were digital computers, although even they were not capable of the all round evaluation of complete thought. They were restricted by their own programs.

What are cognizers? They are truly machines that think. They have the ability to recognize objects and understand speech. They do not just follow a set of

rules, laid down by a programmer, to achieve a logical answer to a problem, nor do they come up with 'does not compute' or 'syntax error' if it is outside the scope of their knowledge.

Cognizers can actually learn to recognize objects and understand speech and, if necessary, change their way of thinking to reach an instinctive rather than a mechanical solution. They are, in fact, synthetic minds.

The difference between a computer and a cognizer is that the former separate the functions of remembering and computing while the latter combine memory and processing which, as Johnson and Chappell point out, will thus 'enable them to transcend the bottleneck between memory and the CPU (Central Processing Unit) that is choking traditional computers.'

There is already, at John Hopkins University in the USA, a scientist, Terrance Sejnowski, working on a neural network simulator that can translate word processor text into understandable English speech. He teaches his

system to read the text, not by programming but by allowing it to learn for itself. After just sixteen hours of training his model, called NETalk, could read the 100-word example text with 98 per cent accuracy. Its voice sounds 'almost babylike' but the rhythms of human speech are there.

First generation cognizers are already coming onto the market. There are now plug-in modules or specialized computer software for PC's that add cognizing simulation abilities. The only thing restraining progress is the fact that many companies lack experts in the cognizer field. They need research engineers who are familiar with neural networks of the brain. And there are not too many of those around at the present.

As the authors propound perhaps the best cognizer system will, eventually, be a neurocomputer. A hybrid in which the computer checks the cognizer for logical mistakes and the cognizer keeps the computer from irrelevant tangents.

If you want an easy-to-read-and-understand book on the subject this is not it. My own (human) neural network had a hard task taking in many of the paragraphs at first reading, but the fascination of the unfolding story kept me ploughing on. It was well worth the effort.

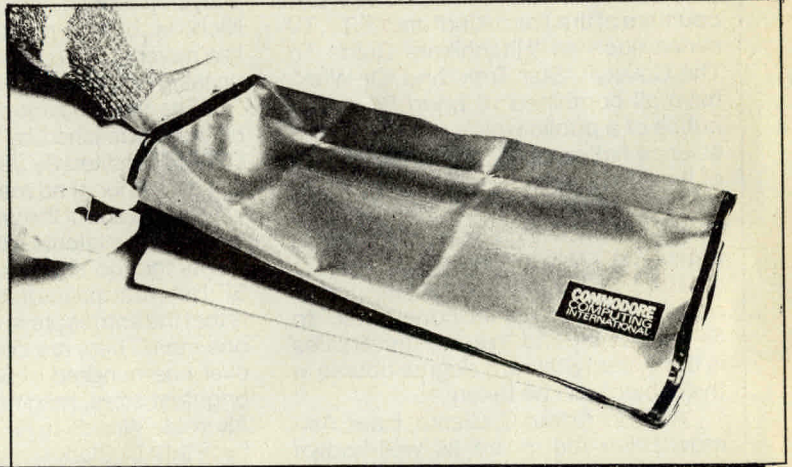
D.M.

COVER UP!

Only £3.99
for the C64 and
Plus/4 (+ 75p P+P)

A cover for your Commodore computer will protect it from dirt and damage.

CCI is making a special offer of strong, goodlooking covers to fit Commodore computers : C64, and Plus/4 . The covers are designed in a cool grey with a neat yellow on black logo. They are of the highest quality and manufactured in smooth plastic to first class standards. CCI covers... Protect your Commodore computer with a touch of style.



Please send me covers for my
C64 Plus/4 b4C
I enclose cheque/P.O. payable to Croftward Ltd
for £.....

Please charge my Exp. date.....

Access Acc No

Name

Address

Postcode

Send to: CCI Cover Offer 010 **C9102**

Commodore Computing International

40 Bowling Green Lane

London EC1R ONE

Allow 28 days for delivery



dataplex

10 Petersfield Avenue, Slough, Berkshire SL2 5DN
Tel: 0753 35557 Fax: 0753 511122

Conditions of sale
- All prices exclude VAT and delivery charges
- E&OE all prices subject to change without notice
- Please add £1 + VAT for consumables and £8 + VAT for all other items for next day delivery

AMIGA HARDWARE	864.00
A500 COMPLETE	279.00
A500 + TV MODULATOR	289.00
NEW AMIGA BATMAN PACK INCLUDES A500 COMPUTER + SOFTWARE, MANUALS, MOUSE ETC., BATMAN GAME, PAINT II, F18 FLIGHT SIMULATOR, NEW ZEALAND STORY, TV MODULATOR, *FREE DATAPLEX OFFER OF QUICKSHOT II TURBO JOYSTICK	317.00
AMIGA A500 + BATMAN PACK + 10 STAR GAMES + PHOTON PAINT	345 + VAT
AMIGA ACCESSORIES	110.00
A501-512K RAM	8.00
FREE FITTING IF BOUGHT WITH AMIGA 500!	
AMIGA JOYSTICK	19.00
TV MODULATOR	4.00
MOUSE MAT	8.00
AMIGA TO PHILIPS LEAD	10.00
AMIGA TO PRINTER LEAD	68.00
DATAPLEX DRIVES	63.00
1MB 3.5" EXTERNAL DRIVE	63.00
1MB 3.5" INTERNAL DRIVE	99.00
1MB 5.25" EXT. DRIVE	478.00
DATAPLEX HARD DRIVES	529.00
20MB DRIVE A500/1000	910.00
30MB DRIVE A500/1000	
60MB DRIVE A500/1000	
PLEASE RING FOR OTHER CAPACITY DRIVES	
PHILIPS MONITORS	189.00
CM8833 14" RGB/CVBS COL. MON.	89.00
SM7723 14" AMBER MONITOR	249.00
CM8852 HI-RES COL. MON.	79.00
BM7502 12" CVBS GREEN MONITOR	85.00
BM7522 12" CVBS AMBER MONITOR	
PRINTERS	105.00
AMSTRAD DMP3160	115.00
AMSTRAD DMP3250DI	195.00
AMSTRAD LQ-3500DI	207.00
AMSTRAD DMP4000	310.00
AMSTRAD LQ5000DI	
DOT MATRIX RANGE	110.00
CITIZEN 120D	127.00
CITIZEN 180E	255.00
NEW 24PIN SWIFT 24	42.00
COLOUR UPGRADE FOR SWIFT	139.00
ALL CITIZEN PRINTERS COME WITH ONE YEAR WARRANTY	
EPSON LX400	178.00
EPSON LX850	405.00
EPSON FX1060	195.00
EPSON LQ400	518.00
EPSON LQ860	649.00
EPSON LQ1060	255.00
EPSON LQ550	395.00
EPSON LQ850	
HEWLETT PACKARD	265.00
THINKJET	334.00
QUIETJET	399.00
DESKJET	436.00
DESKJET+	524.00
PAINTJET	646.00
RUGGED WRITER	864.00
ALL HEWLETT PACKARD PRINTERS COME WITH 12 MONTHS ONSITE WARRANTY.	
STAR LC-10 MONO	135.00
STAR LC-10 COLOUR	168.00
STAR LC-24-10	194.00
STAR XB 24-10	389.00
STAR XB 24-15	524.00
STAR LC15 9PIN 136 COLUMN	264.00
STAR LC24 15 25 PIN	328.00
STAR FR10	299.00
STAR FR15	389.00
80 COLUMN 24 PIN NEC P2200	234.00
NEC P6 + 80 CHARACTER	389.00
NEC P7 + 136 CHARACTER	499.00
COLOUR UPGRADE KIT	80.00
PANASONIC KXP1081	219.00
PANASONIC KXP1124	239.00
SHEETFEEDER	85.00
PANASONIC KXP1180	144.00
PANASONIC KXP1592	253.00
PANASONIC KXP1595	319.00
PANASONIC KXP1540	404.00
NEW MANNESMANN TALLY LAUNCH OFFER	
MT81 (DOT MATRIX)	110.00
SHEETFEEDER	62.00
SERIAL I/F	49.00
RIBBONS	
KXP 1081/1090/112	4.00
DMP 2000/3000/3160	2.80
DMP 4000	4.40
PCW 8256/LQ3500	4.50
PANASONIC 3131/MP26	4.40
LX800/RX/MX/PX50	3.15
FX1000/FX/RX100	4.40
NL 10	4.40
LQ500/800/850	4.40
LC-10	4.40
NEC	5.00
VARIOUS SELECTION IN STOCK	
PLEASE CALL FOR PRICES.	
DISKS	
BRANDED SONY/KODAK ETC.	
BOX 3.5" DD/DS 135TPI	17.00
BOX 5.25" DD/DS 96TPI	15.00
MAXELL CP2 3" DISKS	22.00
ANTISURGE PLUGS	
SINGLE SOCKET	12.00
4 WAY A/SURGE GANG	18.00
WITH LEAD	
DUST COVERS	
PC DUST COVERS	15.00
PCW DUST COVERS	15.00
PRINTER DUST COVERS	6.50
PROFESSIONAL REPAIRS CARRIED OUT	

DIGICRAFT

QUALITY AMIGA DIGITISING

Fed up with paying high prices? Then look no further We at Digicraft aim to please all our customers with our friendly and low cost digitising service.

We are confident that we offer the best service together with the best prices possible for Amiga owners, unlike certain other people we could mention!

- Top quality digitising using the latest technology
- Sony branded disks used as standard
- Users may send their own disks if they prefer
- No extra charge for colour pictures
- Free slideshow utility with every order
- Competitive prices

Any of the Amiga's resolutions can be displayed with interlace or overscan if required (please state). Approx. 10 pictures can be stored per disk.

Colour or B/W pictures £1.00 each.
Please add £2.50 per disk (P&P inc). Deduct £1.00 if sending your own disk(s).

Make cheques/POs payable to:

DIGICRAFT, 45 Endsleigh Court, Colchester, Essex CO3 3QT.
Tel 0206 767107

or, alternatively, send a SAE for more info on this and our T-Shirt service.

COMMODORE

MAGENTA PAGES

HINDLEY ELECTRONICS

The Computer repair specialists

SAME DAY SERVICE
(CALLERS)
64 ONLY

FAST

24Hr TURNAROUND
(POSTAL)
64 ONLY

EXPERT COMPUTER REPAIRS

COMMODORE · SINCLAIR · AMSTRAD · ACORN · BBC

(INC VAT AND FULLY INSURED RETURN POSTAGE)

Commodore 64.....£25.00	Commodore 64C.....£29.00	Commodore 128.....£32.00
Commodore + 4.....£25.00	Commodore Vic 20.....£18.00	AMIGA 500.....£40.00
1541 disk drive.....£32.50	(OTHER DRIVES REPAIRED, RING FOR DETAILS)	
Spectrum 48K.....£18.00	Spectrum + 2.....£25.00	Amstrad CPC 464.....£25.00
	Acorn Electron.....£26.00	

3 MONTHS "NO QUIBBLE" WARRANTY ON ALL REPAIRS

SPARES · SPARES · SPARES

Low Prices E.G. Spectrum 48K Membrane £3.99 Spectrum + £6.99 Low Prices

COMPUTER ICS and GENERAL COMPONENTS

WHY PAY MORE

(Send Large SAE for Full Lists)

HINDLEY ELECTRONICS



Dept CCI, 97 Market Street, Hindley, Wigan WN2 3AA. Tel (0942) 522743

Computer repairs: Callers requiring same day service please ring before calling and add 10% to standard charge. Standard charges do not include repairs to external items E.G. power units, tape recorders, joysticks etc. A surcharge may be levied for machines that have sustained severe damage E.G. fire, flood, tampering.

VSE

High Quality Repairs
Low inclusive Prices
The Logical Choice!

Technical Services

REPAIRS

C64/C16/Plus 4	£21.90
C64C	£24.90

UPGRADES

C16 to 64k RAM	£27.90
----------------	--------

ACCESSORIES

Datascorder C64	£18.90
Micromate PSU	£19.90

All repairs and upgrades guaranteed 4 months, repair prices quoted apply to any single fault* and are inclusive of parts, labour and VAT. All accessories are new and guaranteed 12 months. Free return carriage for UK mail order customers.

* Excludes replacement of complete keyboard assembly (free estimate given).

VSE Technical Services (Dept.109), Unit 6, 8 Nursery Road,
London SW9 8BP Tel. 01-737 0234

MAKE YOUR COMMODORE 64/128 EARN!

Yes making money with your Commodore becomes incidental when you know how. Your micro is, if only you know it, a gold mine. The size and make is irrelevant. Make the initial effort. **NOW** by starting your own **HOME BASED BUSINESS**

This may be the most important move you will ever make!

REMEMBER: You'll never get rich by digging someone else's "ditch". Anyone in the country, including YOU, can become very rich in a relatively short period of time just by doing a few basic things! It's more rewarding than playing games. The benefits are many and varied. Full or part-time. For **FREE** details send S.A.E. to:



HOME BASED BUSINESS

31 PILTON PLACE (CCI 15)
KING AND QUEEN STREET
WALWORTH, LONDON, SE17 1DR.

3 1/2" DISKS

EVEN BETTER DISKS - EVEN LOWER PRICES

10	x31/2 DS/DD.....	£8.50	Ordering 100 disks or less?
25	x31/2 DS/DD.....	£19.00	Use our credit card hotline.
50	x31/2 DS/DD.....	£35.00	Access - 0742 726485 - Visa
100	x31/2 DS/DD.....	£66.00	AMIGA MEMORY
250	x31/2 DS/DD.....	£160.00	0.5MB - NO CLOCK..... £75
500	x31/2 DS/DD.....	£299.00	0.5MB WITH CLOCK..... £89
1000	x31/2 DS/DD....	£575.00	AMIGA EXTERNAL DRIVE ... £79
			ATARI EXTERNAL DRIVE..... £84

WE ONLY USE SONY DISKS. LIFETIME GUARANTEE. 50 AND 100 DISKS SENT 3 DAYS DELIVERY. ALL OTHER ITEMS SENT NEXT DAY. FULL MONEY BACK GUARANTEE. SAME DAY DESPATCH. CHEQUES AND PO'S TO:

HARDWARE DISTRIBUTION (dept CC)
19 DIVISION STREET, SHEFFIELD, S1 4GE
0742 726485

COMPUTER REPAIRS

ATARI ST/AMIGA

Simply send your machine along with a £15 diagnostic fee and you will be sent a written quotation for the cost of repairing your machine.



FIRST AID
FOR
TECHNOLOGY

★ TYPICALLY £45. 1 WEEK TURNAROUND ★

W.T.S. ELECTRONICS LTD, CHAUL END LANE, LUTON, BEDS, LU4 8EZ
0582 491949 (4 LINES)

COMMODORE

MAGENTA PAGES

WHY WORRY?

Why worry about your coursework or homework when your 64 or 128 could help. A superb 38k maths program is now available complete with superfast hi-res graphics option to picture your problems and solutions. An invaluable study aid, it comes complete with instruction booklet and smart case. Disk = £5.99, Cassette = £4.99, Contact Insight Software, 85 Bordin Close, Brighton Hill, Basingstoke, Hampshire, RG22 4EW.

TC COMPUTERS

12a Barnards Way, Charlton Heights,
Wantage, Oxon OX12 7EB
OXFORDSHIRE PREMIER COMMODORE
DEALER
02357 60177

AMIGA PD SOFTWARE

Large collection of all categories available
at very reasonable prices. Latest FISH
DISKS etc. Send SAE to:
Dept. CCI, PO Box 155
Cardiff CF5 4YA

COMMODORE 64/128 SOFTWARE LIBRARY

- ★ Free membership
 - ★ 7 day hire
 - ★ Tapes from £1.00 to £1.50
 - ★ Up to 25% off software
 - ★ 10% off hardware
 - ★ Newsletter every month
 - ★ Competitions
- ★ Disk from £1.50 to £2.00
For free catalogue s.a.e. to:

ACE SOFTWARE LIBRARY
14 Chippendale Court, Finaghy,
Belfast BT10 0DU

COMPUTER REPAIRS

SPECTRUM, COMMODORE, AMSTRAD,
ACORN, BBC etc
Fixed charge repairs on all makes
Please ring for details

MCE SERVICES

33 Albert Street,
Mansfield, Notts NG18 1EA
Tel. 0623 653512

COMMODORE SUPPLIES

C64 POWER PACK	£19.95
AMIGA POWER PACK	£49.95
1530 DATASETTE	£24.95
SERIAL LEAD	£5.95
C-16 POWER PACK	£12.95
+4 POWER PACK	£29.95
1531 DATASETTE	£24.95
50 5/4" DISKS	£14.99

Prices include VAT & P+P. Chq/PO to:
Omnidale Supplies, 23 Curzon Street,
Derby, DE1 2ES. Tel: 0332 291219
ACCESS/VISA ACCEPTED

TO SET THE PACE

FILL THIS SPACE!

CALL 01-278 0333 EXT 280

... NOW!

COMMODORE REPAIRS

(with FREE extended guarantee)

COMMODORE 64	£28.70
COMMODORE 128	£36.70
COMMODORE C16/+4	£20.70
COMMODORE AMIGA	P.O.A.

Price is all inclusive and we guarantee the whole computer (excluding P.S.U.'s etc) for six months. Multiple faults may incur extra costs.

KPR MICRO

34, Petunia Crescent, Springfield,
Chelmsford, Essex CM1 5YP
Tel: 0245 - 468554

ALPHA DIGITAL COMPUTER SERVICES

24 Fitzwilliam Road, Clapham, SW4 0DN
QUALITY COMPUTER REPAIRS
01-622 5124

A1 COMPUTER SERVICES

Unit 9 Paddock Mount Offices, Dawley,
Telford TF4 3PR. Tel: 0952 502737.
Computer repairs, supplies, leases & credit
available.
Credit Brokers.

COMMODORE 64/128. CASSETTE ONLY

X RATED ADULTS ONLY GAME

FANTASY

ONLY
£6.50

Loosen your
collar, get out
your JOYSTICK
and get stuck in.
By the time you
finish you'll be
exhausted.



WARNING: If you are easily
offended do NOT order this game.

R/H MICROTEC
32 Hazell Way
Stoke Poges
BUCKS SL2 4JD

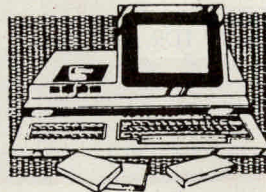
ONLY AVAILABLE BY MAIL ORDER

ONLY POOLS AND HORSES

Why not use your C64 or C128 to help
you win? We publish programs
covering all aspects of racing and
football betting. Form analysis,
keeping records, pools entries, etc.
Enthusiast or occasional punter -
there'll be a program for you.

S.A.E. for details to
BOXOFT (CCI), 65 Allans Meadow,
Neston, South Wirral, L64 9SQ

COMPUTER SYSTEMS



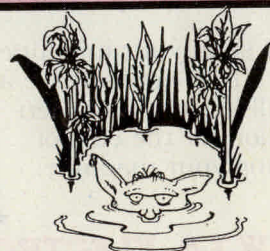
- REPAIRS
- ★ Commodore
 - ★ Sinclair
 - ★ Amstrad
 - & others
 - ★ Sales & Supplies

dB

ELECTRONIC SERVICES
CHELMSFORD 0245-260874

Pen Tech

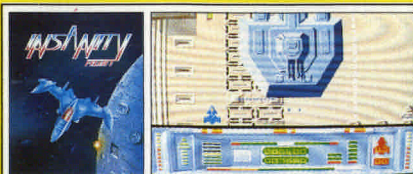
For Illustration, Design
and Artwork
Tel: 0689 23746



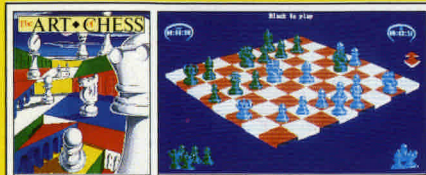
FREE! TENSTAR PACK WORTH OVER £229!



FREE! - AMEGAS - by Players



FREE! - INSANITY FIGHT - by Microdeal



FREE! - ART OF CHESS - by SPA



FREE! - MERCENARY COMP - by Novagen



FREE! - BARBARIAN, ULT WARRIOR - by Palace



FREE! - TERRORPODS - by Psygnosis



FREE! - BUGGY BOY - by Elite



FREE! - THUNDERCATS - by Elite



FREE! - IKARI WARRIORS - by Elite



FREE! - WIZBALL - by Ocean

Commodore AMIGA



ONLY **£3.34** PER WEEK
RETURN COUPON FOR DETAILS

£346.95

+VAT = **£399**
INCLUDES FREE UK DELIVERY

The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing, based around the new Motorola 68000 chip. The A500 has 512K RAM and a 1Mbyte double sided disk drive built-in. It can be connected directly to a wide range of monitors, or to a domestic TV set through a TV modulator. Designed with the user in mind, the A500 features a user friendly WIMP environment and comes supplied with a free mouse. And, when you buy your Amiga from Silica Shop, the UK's No1 Amiga specialists, you will experience an after sales service that is second to none, including a technical support helpline and free newsletters and price lists. Return the coupon below for our current information pack, which will give details of the Silica service and the very latest Silica Amiga offers. E&OE

WHY SILICA SHOP?

Before you decide when to buy your new Commodore Amiga computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer as well as expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Amiga related products in the UK, a full time Amiga specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years and can now claim to meet our customers' requirements with an accuracy and understanding which is second to none. Here are just some of the things we can offer you:

THE FULL STOCK RANGE: The largest range of Amiga related peripherals, accessories, books and software in the UK.

AFTER SALES SUPPORT: The staff at Silica Shop are dedicated to help you to get the best from your Amiga.

FREE NEWSLETTERS: Mailed direct to your home as soon as we print them, featuring offers and latest releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped to Silica Shop customers within the UK mainland.

PRICE MATCH PROMISE: We will normally match our competitors offers on a 'same product same price' basis.

FREE TECHNICAL HELPLINE: Full time team of Amiga technical experts to help you with your technical queries.

But don't just take our word for it. Complete and return the coupon below for our latest Amiga literature and begin to experience the Silica Shop specialist Amiga service.

PHOTON PAINT PACK

A500 Computer	£399.99
TV Modulator	£24.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£724.43
LESS DISCOUNT:	£325.43
PACK PRICE INC. VAT:	£399

1084S MONITOR PACK

A500 Computer	£399.99
1084S Colour Monitor	£299.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£999.43
LESS DISCOUNT:	£350.43
PACK PRICE INC. VAT:	£649

FREE FROM SILICA

When you buy the Amiga 500 from Silica Shop, you will not only get a high power, value for money computer, we will also give you some spectacular free gifts. First of all, we are now including a TV modulator with every A500 stand alone keyboard, so you can plug your Amiga straight into your TV at home (the modulator is not included with the A500+A1084S pack as it is not required for use with monitors). Secondly, we have added a free copy of Photon Paint, an advanced graphics package with an RRP of £69.95. Last (and by no means least!), so that you can be up and running straight away, we are giving away the sensational TENSTAR GAMES PACK with every A500 purchased at Silica Shop. This pack features ten top Amiga titles which have a combined RRP of nearly £230! Return the coupon for details.

FREE TENSTAR PACK

When you buy your Amiga 500 from Silica Shop, we want to make sure you get the best deal possible. That is why we are giving away the TENSTAR GAMES PACK worth nearly £230, absolutely FREE with every A500 purchased from us. The TenStar Games Pack includes ten titles for the A500, each individually packaged in its own casing with instructions.	Amegas	£14.95
	Art Of Chess	£24.95
	Barbarian, Ult Warrior	£19.95
	Buggy Boy	£24.95
	Ikari Warriors	£24.95
	Insanity Fight	£24.95
	Mercenary Comp	£19.95
	Terrorpods	£24.95
	Thundercats	£24.95
	Wizball	£24.95
TOTAL RRP:	£229.50	INC VAT

DO YOU OWN AN AMIGA?

If you already own an Amiga computer and would like to be registered on our mailing list as an Amiga user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist Amiga service that is second to none.

SILICA SHOP:

SIDCUP (& Mail Order) 01-309 1111
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

LONDON 01-580 4000
52 Tottenham Court Road, London, W1P 0BA
OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE

LONDON 01-629 1234 ext 3914
Selfridges (1st floor), Oxford Street, London, W1A 1AB
OPEN: MON-SAT 9am - 6.00pm LATE NIGHT: THURSDAY 9am - 8pm

To: Silica Shop Ltd., Dept CCI 1/90, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX

PLEASE SEND ME FREE LITERATURE ON THE AMIGA

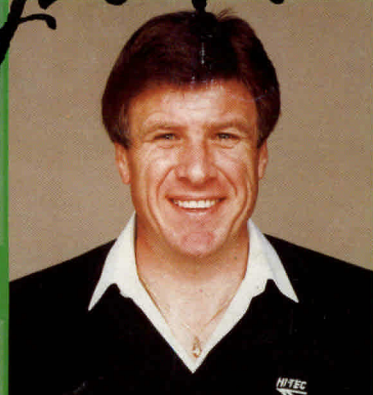
Mr/Mrs/Ms: Initials: Surname:

Address:

..... Postcode:

Do you already own a computer
if so, which one do you own?

Emlyn Hughes



INTERNATIONAL



GAME OF THE YEAR!

WINNER OF CCI OSKARS FOR
BEST SPORTS SIMULATION
AND BEST GAME OF THE YEAR!

Quite simply the best football
simulation available for the 64.
Nothing short of superb.

ZZAP 64

**AVAILABLE NOW FOR
COMMODORE 64
£9.95 tape £12.95 disk**

Spectrum & Amstrad available now

Audiogenic

Audiogenic Software Limited, Winchester House,
Canning Road, Harrow HA3 7SJ, England

Order by phone on 01 861 1166

