AMIGA USER INTERNATIONAL

Incorporating Commodore Business Magazine

AUGUST 1988

£1.95

CANADA $4.95
USA $4.50

PERFECT SOUND

DISK 2 DISK
TURBO SILVER
NEURAL CONNECTION

ZOOM
STAR FLEET I

ENLIGHTENMENT DRUID 2

EXCELLENCE KIND WORDS

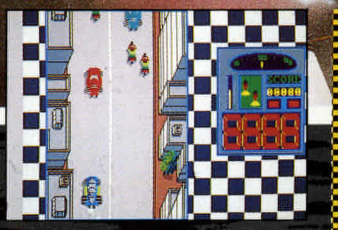
PETER BEARDSLEY'S SOCCER

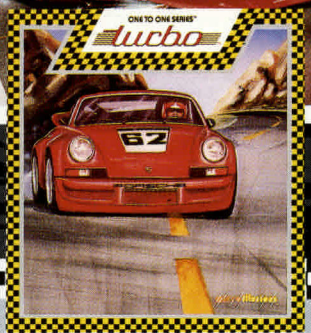
BUGGY BOY

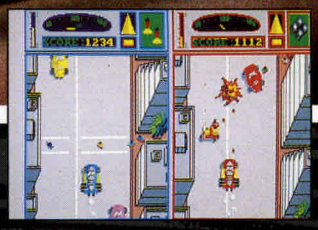
Only the Amiga makes it possible!

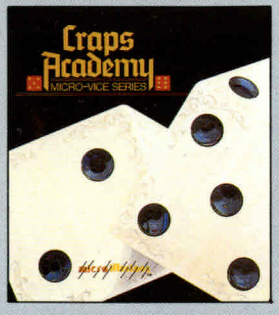
TURBO...
WAR ON WHEELS!

Join the road war and race through the cities, countrysides and treacherous mountains. Face the challenge to survive and use your driving skills while you battle your rivals to be the first to cross the finishing line. Turbo offers single, double and modem playability. **Amiga – £19.99.**



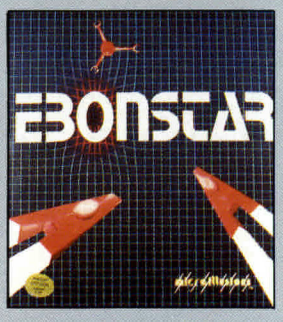






◄ **CRAPS ACADEMY** *Craps Academy will enable you to shoot craps with the best gamblers in the world. Learn which bets are favourable and which bets are for the suckers. Animated dice give you realistic playability, while learning what the numbers on the table mean, and how and what to bet. The table rules can be modified to adhere to the Las Vegas, Reno or Atlantic City house rules. Increase your winnings with Craps Academy.* **Amiga – £24.99**

EBONSTAR *The year is 3,000 AD. Man's natural instinct for competition has been intensified to amazing levels. This has resulted in Ebonstar – where you hurl your opponents into the ever-moving synthetic black hole while avoiding obstacles and attempting to destroy the Ebonstar. Played with one to four players and individuals or teams, skill and strategy reign supreme in Ebonstar.* **Amiga – £24.99** ►



microillusions

ACTIVISION.

AMERICAN EXPRESS VISA

Mail Order: Activision (UK) Ltd., Units 3 & 4 Lloyds Close, Finedon Road Industrial Estate, Wellingborough, Northampton NN8 4SR. Tel: (0933) 76768.

THE AMIGA DIMENSION

THAT'S ENTERTAINMENT

I recently received through the post a brochure offering "The Amiga Games Pack". It wasn't only offering entertainment software but an Amiga 500 too. With the lowering of the price of the Amiga 500 – to an official £399 in the UK – obviously more and more "games-only" users, it is being said, will be entering the Amiga Dimension. At the same time, there is beginning, in the software houses around the world, a debate about whether this price fall and extra encouragement for games will damage the perception of the Amiga as a "serious" or even business machine.

Undoubtedly, when the Amiga began, at its early high price, the major growth took place in the non-games area. Now, as can be seen from this and recent issues of ***AUI***, all the major games companies are jumping on the 16 Bit bandwagon. Yet as can also be noticed from this ***AUI***, the vast preponderance of new products and features are still enlarging aspects of the Amiga Dimension that are not games, even if they may be classified as "Entertainment", which indeed is how, most of what is done with an Amiga could be described.

So, though the price of an Amiga may go down – and the price of software too, though that is a subject which deserves a discussion of its own – it does not seem, in spite of some people's worries, that the Amiga Dimension is showing much sign of declining into just "playtime on a souped-up games machine". Those who want only that will probably spend under £100 and buy a games console anyway.

Antony Jacobson, Managing Editor and Publisher

CONTENTS

CONSTANT FACTORS

Amiga Dimension	3
Newsfile	5,6,8
Hard Copy	87,88
Subscription Form	65
Amiga Product Guide	95,96,97,98

TEST DRIVE

Turbo Silver	10,11
Perfect Sound	14,15
Excellence!	20,21
Disk-2-Disk	22,23
Gold Spell II	24
Printkit IV	31
APL 68000	32,38
Power Windows	45,48
Kind Words	60,61
Shell & Toolkit	62,64
F-Basic	72,98
Turbo Print & Int	81
Professional Text Engine	84,85

USER PORT

Amiga Answers	39,40
Plea to developers	48
Waveform Workshop	77,78,79,80

ENTERTAINMENT

Frost Byte	28
StarFleet 1	29
Buggy Boy	35
Peter Beardsley's International Football	42,43
Passengers on the Wind	52
Phantasm	57
Zoom	58,59
Vyper	66
Seconds Out	67
Gettysburg The Turning Point	68
Stock Market	74,75
Football Manager II	82,83
Enlightenment Druid II	90

MENTOR

QUAD	69,70
Amiga Programming	92,93,94

FIELD REPORTS

UBI Soft	12
Commodore Show Report	16,17
CATS	23
Heard It On The Grapevine	26,27
Amiga Sysop	37,38
The Neural Connection	54,55

SPECIAL OFFERS

Arkanoid Offer	34
Amiga Covers	76
Okimate 20	91

AMIGA USER INTERNATIONAL

Managing Editor and Publisher ..... Antony Jacobson
Editor ..... Ian Bennett
Features Editor ..... Anthony Mael
Staff Writer ..... Tony Horgan
Artwork ..... Rico Gusman
Production Manager ..... Keith Miles
Production Controller ..... Sandra Gallagher
Senior Advertisement Manager ..... James Mack
Advertisement Manager ..... Billy Brown
Advertisement Executive ..... Michelle Singlehurst
Advertisement Executive ..... Paul Monaf
Financial Director ..... B.J. Lewis M.Sc. F.C.A.
Special Offers Executive ..... Errol Barker
Cover Illustration ..... Al Meric

Contributors
..... Alastair Statham
..... Al Meric
..... Andy Eskelson
..... Andy Moss
..... Bill Donald
..... Bob Chappell
..... Bud Vennos
..... Giulio Zicchi
..... John Walker
..... Les Cooke
..... Paul Andreas Overaa
..... Peter Lee
..... Phil Wilkes
..... Dr. Rahman Haleem
..... Rico Gusman
..... Simon Benvenutto
..... Stuart Williams
..... Yufi Large
..... Zack Mule Skinner

Telephone 01-278 0333
Editorial ext: 274
Advertising ext: 280/286
Subscription ext: 274
Published by Croftward Limited
Finsbury Business Centre
40 Bowling Green Lane
London EC1R 0NE
Distributed by Comag, Tavistock Road
West Drayton, Middx UB7 7QE
Printed by Chase Printers Group
Typesetting by Kittiwake Graphics Ltd

Amiga User 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 statement or errors contained in material from independent sources or authors which may be reproduced from time to time.

© Croftward Limited 1988

ADVERTISERS DIRECTORY

16 Bit Centre	73	Grand Slam	9
17 Bit Software	56	H.B. Marketing	49,73
Activision	IFC	Hammersoft	86
Amiga Centre	7	Microtext	53
Amiga Centre Scotland	56	Hobbyte	30
Amiga P.D. Library	86	Humgold Computers Ltd	56
Amiga Users Group	71	Lan Computers	50,51
Burocare	OBC	Metacomco	63
Byteback	30	MPC Software	36,63
Bytes & Pieces	63	National Computer Library	71
Cestrian Software	44	Newday	53
Cloudhall Ltd	86	Ocean Software	33
Cut Price Software	71	Robson Electronics	86
Datel Electronics	18,19	Robtek	46,47
Delta PI	73	S.C.C.	53
Discovery Software	IBC	Timesoft	49
Digipro	25	Triangle Television	63
Easyprint	15	Tri Computer Software	53
Gainstar Ltd	71	U.S. Gold	41
George Thomson Services	13		

New!
PAL Version 3.0
includes overscan, half-brite support and more!

DIGI VIEW

DELIVERS ULTIMATE GRAPHICS POWER

Bring the world into your Amiga with Digi-View, the 4096 color video digitizer. In seconds you can capture any photograph or object your video camera can see in full color and with clarity never before available on a home computer. Digi-View's advanced features include:

- Dithering routines give up to 100,000 apparent colors on screen
- NewTek's exclusive Enhanced Hold-and-Modify mode allows for exceptionally detailed images
- Digitize images in any number of colors from 2 to 4096
- Print, animate, transmit, store, or manipulate images with available IFF compatible programs
- Digitize in all Amiga resolution modes (320x200, 320x400, 640x200, 640x400)

"Digi-View sets new standards for graphics hardware"-*InfoWorld*

Digi-View is available now at your local Amiga dealer or call:
0101 913354 9332

ONLY $199.95

NEWTEK INCORPORATED

All photos actual unretouched Digi-View pictures shot directly off the 1080 Amiga monitor.

Distributor: HB Marketing Ltd
Brooklyn House
22 The Green
West Drayton
Middx
UB7 7PQ
Tel: 0895 444433

NEWSFILE

The Flintstones

MicroIllusions have announced the licensing of Hanna-Barbera's world famous cartoon characters. MicroIllusions' President, James A. Steinert, signed the licensing contract with Hanna-Barbera productions, the world' leading producer of animated entertainment. Some of the cartoon characters included in the deal are the Flintstones, the stone-age family who star in one of the most durably popular cartoon series in syndication; The Jetsons, the space-age family currently marking its 25th anniversary with both a top rated weekly series in the USA and an up-coming television movie; Scooby-Doo, the cowardly Great Dane in the hit weekly series; Johnny Quest, the action-adventure series still alive after 24 years in syndication. "This is the first of many such licences MicroIllusions plan to close" stated Mr Steinert. "We'll bring to the computer what people want to see. Otherwise, we'll create the tools so that the public can make their own." He was referring to the soon-to-be-released Photon Video series, the full-on animation software. The initial products, the Flintstones, the Jetsons, Scooby-Doo and Johnny Quest created by MicroIllusions, will be available towards the end of the year. They tell us the games will keep the integrity of all characters and story plots. Arcade-style and/or an adventure-style game will be created for each of the Hanna-Barbera characters.

Postscript Compatibility for ProWrite

New from New Horizons Software is ProScript, a program which brings PostScript compatibility to their best selling Amiga word processor, ProWrite. ProScript translates ProWrite files into PostScript, which can then be either sent directly to a PostScript compatible printer or saved as a file for later printing. "PostScript is the industry standard method of producing high quality printed output and is rapidly gaining in popularity among Amiga users," said James Bayless, President of New Horizons Software. "By providing PostScript support for ProWrite, we hope to further extend this trend. With ProScript and ProWrite we are showing how you can obtain high quality results without spending hundreds of dollars on expensive and hard to use desktop publishing programs."

ProScript takes the documents created with ProWrite, which is a multiple font, colour graphics word processor, and translates them into a form that can be used by a PostScript compatible printer. The results of this translation can be sent to the printer directly, or saved to a file for later printing. If the document uses PostScript fonts (which are included with ProScript), the printer will use the actual fonts that are resident in the printer for the highest quality results. If a non PostScript font is used, a bitmap image of the font will be downloaded to the printer. All colour graphics in the ProWrite document are printed as well, with the colours being first converted into shades of grey.

In addition, ProScript has several options that give greater control over the appearance of the printed result. There are options to reduce or enlarge the printout, choose the paper size, print only even or odd pages and control the number of grey shades used for graphics. ProScript is scheduled to be released in the third quarter of 1988.
Price: $49.95
Contact: Karen Bayless, New Horizons Software Inc, PO Box 43167, Austin, TX 78745.
Tel: (512) 328-6650.

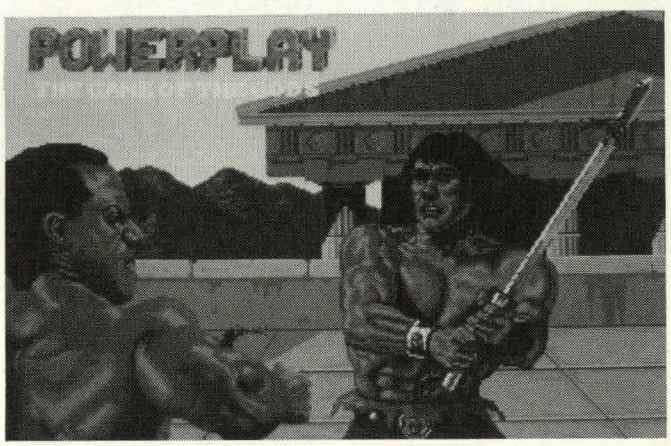
AC/Basic compiler V1.3

Absoft have now begun shipping Version 1.3 of their AC/BASIC compiler for the Amiga. AC/BASIC is the BASIC compiler that is compatible with the AmigaBASIC interpreter bundled with the Amiga. Improvements in the new version include: fixes to several known bugs, 100% compatibility with AmigaBASIC statements and functions, plus new examples including how to access HAM graphics from BASIC. Several components of the runtime library including random file I/O, fielded string processing and a number of floating point arithmetic routines were completely rewritten. A complete spreadsheet, written in AC/BASIC, is also included as a detailed example of how to write sophisticated application programs that take advantage of the Amiga's ROM routines.

All users of AC/BASIC who were registered before 16th July 1988 will be sent a V1.3 upgrade at no charge. Anyone registered after that date will be charged a $50 upgrade fee.

Caught in the act

Much concern has been expressed in the office of the UK's data protection registrar, Eric Howe. It seems that the long awaited and much talked about Data Protection Act is being used by unscrupulous employers to enquire into prospective employees' pasts. On filling in a job application, candidates are asked to exercise their right to access Police information. This information must then be handed over to the employer. Not only have private companies been misusing the Act in this way but it has been reported that some local authorities will not issue taxi licences until records have been provided. Nigel Waters, the assistant registrar, revealed that the nine or ten complaints they have had to date are probably only "the tip of the iceberg". The blatant misuse of the Act in this way is, obviously, "contrary to the objectives of data protection" and Mr Howe is to look into the problem as part of a review of the legislation planned for this summer.



Powerplay it again, Sam

A new version of Amiga "Powerplay; The Game of the Gods" will be released shortly. A spokesman for Arcana said, "It became more and more obvious to us that Amiga owners were no longer satisfied with games ported over from the Atari and that it was time for someone to produce a game solely for the Amiga, using all of its graphic capabilities. We also looked very carefully at what reviewers said about the original game and did our best to put right any criticisms they had. We really think that all the time and effort that has been put into the new version is worthwhile. The visual differences are tremendous." Arcana are now looking into producing more question files for the game, possibly area specific such as sport, TV and films etc.
Price: £19.95

VDUs – Are pregnant women at risk?

A new survey published in the June issue of "The American Journal of Industrial Medicine" conducted by the Kaiser Medical Care Programme of Oakland, California, involving 1,600 pregnant women revealed that pregnant women who operate VDUs for more than 20 hours a week suffered twice as many miscarriages as those involved in other office work.

Experts believe that Electro Magnetic Radiation emitted by VDUs alters and disrupts cellular development in the embryo.

A new British product can now protect VDU operators from electro magnetic radiation. Microshield is a smock manufactured from an innovative new material whch has remarkable protective qualities, shielding operators from up to 99% of radiation emitted from most VDUs. Fashioned for the eighties, it is light, comfortable, easy to wear and washable and can give operators peace of mind in those vital early weeks of pregnancy or when pregnancy is anticipated.

Price: £55.00 + VAT
Contact: Meditrade Marketing, PO Box 15, Emsworth, Hampshire PO10 7YH. Tel: 0234 377717.

Illegal Library

Many people have been following the case of Jeffrey Batty from Clacton, England, who has been hiring out computer programs on the same basis as a video library. Customers were given a catalogue to choose from, containing over 6,000 items. Trading under the name Orion Software, many of the programs he offered were pirate copies. The operation was raided by the Federation Against Software Theft (FAST) after warnings had been issued to him. Bob Hay of FAST estimated that the recovered stocks of software were valued at £15,000. Batty pleaded guilty to 12 specimen charges of copyright infringement under section 21 of the 1956 Copyright Act and was fined £5,000, with £100 costs. The case is the latest of its kind in the UK and resulted in the heaviest fine to date. However, one offender was jailed for a year.

Lattice C Plus Plus

Lattice Inc. are now offering Lattice C++ for the Amiga. It is a 'pre-processor' which translates the C++ language into C source code which is then compiled by the Lattice AmigaDOS C compiler and linked to create an executable program. A 'driver', similar to the LC driver in the Lattice AmigaDOS C compiler, is provided to allow translating, compiling and linking in one step.

"Because C++ is a superset of the C language, it allows greater data abstraction and object-oriented programming while it provides all of the C language's flexibility and efficiency," said Wayne Nartker, Lattice Vice President of sales and marketing. As C++ is object-oriented, it is particularly well suited for the Amiga where the operating system is defined in terms of objects.

By supporting a feature known as 'inheritance' C++ allows simple objects to be expanded into more complex objects which can then be expanded still further to build objects of increasing functionality. (This is the same principle the Amiga's operating system utilises to allow window based multi-tasking with less than one Megabyte of memory.) By mapping the Amiga's data structures using this inheritance feature, the Lattice C++ package is claimed to eliminate the confusing process of data type casting while retaining the advantages of data type checking.

Lattice say C++ reduces program development time with features to avoid other common errors in C programs. For example, one frequent error in a C program is a mismatch between the type of function argument used and the type expected by the function. C++ can reduce many of these mismatches by allowing the programmer to define functions that have different types or numbers of arguments. It can also check an argument type and, if necessary, make a type conversion based on programmer-specified conversion functions.

The Lattice C++ language allows programmers to declare in-line functions for small frequently-called operations. These in-line functions can replace macros and utilise the same semantics as other functions, yet retain the code size and run-time efficiency of a macro.

The Lattice C++ requires 1.5MB of memory and two floppy drives; a hard disk is recommended.
Price: $500
Contact: Lattice Inc., 2500 South Highland Avenue, Lombard, Il 60148. Tel: (312) 916-1600.

MicroIllusions see the light

MicroIllusions have announced that they will join forces with American Liquid Light Inc, a graphics peripheral manufacturer to construct and distribute a graphic hardware line for the Amiga 2000.

American Liquid Light Inc are also the makers of the Imprint film reading system for the Amiga and the high end line of video products they have developed in conjunction with MicroIllusions should be available by the end of the summer. The move will give the two parties worldwide distribution of video hardware products on the Amiga and provide an edge in the market as a stronger selling point for MicroIllusions' full line of art and animation products such as Photon Paint and Photon Video. As the President of MicroIllusions, James A Steinert stated: "With the addition of this line we will be able to provide turnkey professional art and animation systems at a cost far below the competition."

The two companies will be working together in development, MicroIllusions providing the software interface technology and American Light Liquid providing the hardware technology. All of these products are being designed to make it easy for other software publishers to adapt their products through a development kit that will be available soon.
Contact: MicroIllusions, 17408 Chatsworth Street, Granada Hills, CA91344. Tel: (818) 360-3715.

THE AMIGA CENTRE

77/79 Rochester Row. London SW1

01-931 7161

Selected items:

Excellence	229.00
Prof. page v.1.1	275.00
Maxiplan 500	105.00
Photon Paint	69.00
Digiview v2.	149.00
Futuresound	149.00
Escort 2MB	589.00
Flight Simulator II	36.00
Jet	36.00
Empire	39.00
Defcon 5	29.00
Headcoach	39.00
Synthia	79.00
Sargon III	39.00
Bridge 5	29.00
Shadowgate	24.00
Mercenary	24.00

All prices include VAT. Add £2.00 for postage UK/Europe.

Monday-Saturday 10.00 am/6.00 pm
Access/Visa/Eurocheques accepted
Postage & Packing (UK, Europe) :add £2

Deluxe Photolab

Electronic Arts have announced the release of Deluxe Photolab, their latest graphics program in the Deluxe series. Deluxe Photolab offers a paint program which works in all Amiga graphics modes and features an image processing program and a print program which allow you to print out art in sizes of up to three metres by three metres.

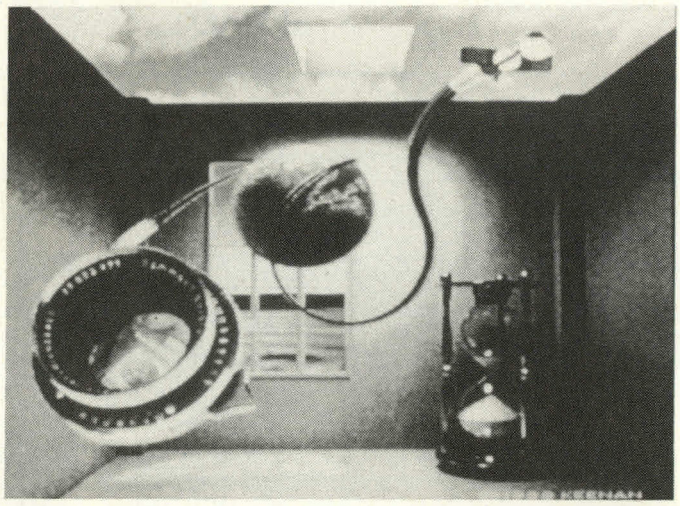
The program can handle images of up to twenty times larger than the Amiga screen – as large as the totaly memory will allow. Deluxe Photolab also offers the facility to work between multiple screens simultaneously, allowing cut and paste between them. The second element of Deluxe Photolab is a colour image processing program designed to give you control over the colour palette, moving, swapping, merging colours, as well as pixel population counts, image processing, colour separations and other special effects.

The print function of Deluxe Photolab will allow any picture in any resolution to be printed out in any size up to three metres by three metres. Printouts wider than one sheet of paper are printed in strips that must be pasted together.

Deluxe Photolab is compatible with the Deluxe series of products as well as any other program which uses the IFF standard.

Price: £69.95

Contact: Electronic Arts, 11-49 Station Road, Langley, Berks SL3 8YN, England. Tel: 0753 46465.



New Director for Abacus

Jim Oldfield, a well known writer and author, has been appointed as director of marketing for Abacus. Jim has written extensively for many consumer magazines and was one of the original founders of the Midnight Gazette. He is a popular speaker among user groups and at trade shows, both in the US and overseas. His personable style and down-to-earth manner make him a favourite among users worldwide. Oldfield is a Sysop for several on-line services and a lecturer on the Q-link forums.

Most recently, Jim oversaw the operations of a well-known Midwest distributor in central Illinois. He has also managed computer and software retail operations.

Arnie Lee, President of Abacus, notes, "We've been talking to Jim for several months about joining our company. We finally convinced him that Grand Rapids was a fine place to move his family. Because Jim has known Abacus for many years, he'll be able to help us immediately. We're confident that Jim's strong qualifications and extensive contacts in the PC industry will help us grow even more in the coming years."

Plonker Box

How many times have you mislaid or damaged important disks by putting them down on your crowded desk? With today's lengthy programs increasingly being sold on two or more disks the need for constant swapping is growing all the time. However, Little Office have come up with the easy answer to this irritating problem. The Plonker Box is a neat little plastic disk holder which attaches to your computer system (or most other smooth surfaces) by means of a self adhesive strip. It is designed to hold those few disks which are in current use. Disks of any standard size may be simply 'plonked in' until needed.

Price: £1.99

Contact: Little Office, The Business Centre, Claughton Road, Birkenhead, Merseyside L41 6EY. Tel: 051-666 1190.

Edinburgh Festival

Since its introduction, the Edinburgh International Festival has grown in reputation and now enjoys international status as one of the leading arts festivals in the world. Against this backdrop, there will be featured for the first time, Amiga computer animation in the form of an animation workshop and exhibition. In addition to this, the Amiga Centre Scotland are organising an Animation Competition. The workshop will be open from the 11th to the 20th August. The competition will be open to any Amiga user. The entries to the competition can be either on disk or PAL videotape. The closing date for entries is 31st July. The finalists' entries will be on display at the Computer Animation Exhibition.

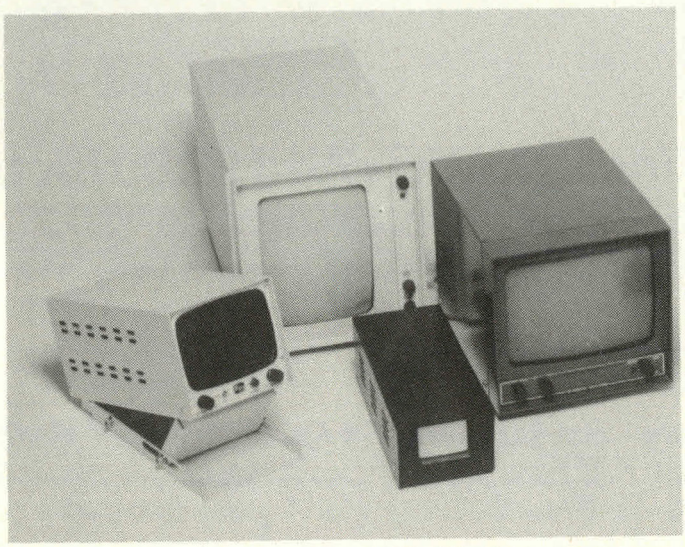
For more details contact: Iain Anderson, Animation Competition, The Amiga Centre Scotland, 4 Hart Street Lane, Edinburgh ER1 3RN, Scotland. Tel: 031-557 4242.

New Monitor Range

The Bluebest range of video monitors has just been updated and rationalised to provide a standard range of ruggedised monitors. These the basis of an off-the-shelf product which will meet 90% of customers' immediate needs.

Initially available in 9", 12" and 19" sizes, cased or 19" rack mounted, these products will complement the existing range of products which extend from 3" to 24" and many of which have NATO code numbers. Using readily available white or green phosphor tubes, line rates from 15KHz to 32KHz are available in portrait and landscape versions with analogue and TTL inputs. Further options such as bonded face panels can also be supplied.

Contact: Russet Output Devices Ltd, Unit 2, Rose Kiln Lane, Reading, Berkshire RG2 0HP, England. Tel: (0734) 868147.



GRANDSLAM

ANNOUNCES

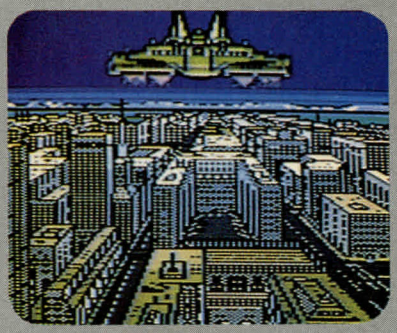
DATASOFT'S ALTERNATE REALITY — THE CITY

SPECIAL OFFER £2 off either The City or The Dungeon

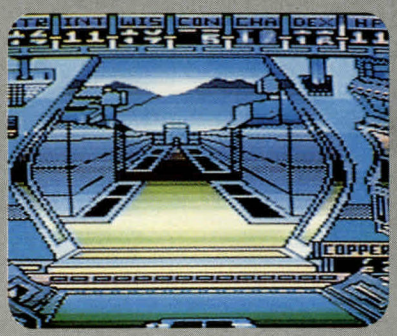
alternate REALITY® The City

NEW

AMIGA and IBM/PC £19.95



- ★ **The Ultimate Role Playing Fantasy Game**
- ★ **3 Dimensional Scrolling**
- ★ **Original Music**



Already available on: C64 Disk; Atari ST & Apple II

This role-playing/adventure game surpasses any you have ever played before. Alternate Reality™ incorporates the ultimate in 3D graphics with original music that weaves through the game to establish the illusion.

The game begins with your abduction by an alien spacecraft. When you finally reach your destination you find yourself in a room with only one exit. Through this opalescent doorway you see a City. Overhead is a panel displaying constantly changing numbers which represent levels of intelligence, strength, dexterity, wisdom, charm, and health. At the moment you pass through the portal the numbers freeze and your Alternate Reality begins. The levels of intelligence, strength, etc. at which you begin your adventure are determined at this point.

Once you're in the City, you encounter all sorts of strange and wonderful beings. The sun rises and sets, rain falls, and secret doors lead you into unexpected perils and delights. You must improve yourself physically, mentally, morally, and financially in order to reach your goal: return to Earth or seek revenge on your abductors.

ALTERNATE REALITY - THE DUNGEON
Available on: C64 Disk & Atari ST and on Apple II in the New Year.

WATCH OUT FOR MORE GRANDSLAM/DATASOFT PRODUCTS - NOT TO BE MISSED!

Write now for your copy of The City and/or The Dungeon by sending a cheque or postal order together with the money off voucher at top of page, to Grandslam Entertainments Ltd, Units 1/2 Conlon Developments, Watery Lane, Darwen, Lancs BB3 2ET, or phone 01-267 6434 our credit card hotline (Access or Visa)

GRANDSLAM

AND

Datasoft®

ALTERNATE REALITY is a registered trademark of Paradise Programming, Inc.
Datasoft is a registered trademark of Intellicreations, Inc.
© 1985 Intellicreations, Inc.
Published under license by Grandslam Entertainments Ltd. for Europe and Australasia.
© 1988 Grandslam Entertainments Ltd.

12-18 Paul Street
London
EC2A 4JS

TURBO

The Juggler, Newton's Cradle, Eric Graham is not the only genius - Ray Tracing gets a turbo-charge and Peter Lee hurries in with the latest developments.

Mention ray tracing to most Amiga people and eyes glaze over. This may be due to the fact that in the past it took forever to accomplish. You could leave a picture to be generated by the computer, grab a night's sleep and, if you were lucky, wake up to a finished screen. And, if my experiences are anything to go by, it probably will not be the right screen you were trying to set in the first place . . . It is unfortunate that the lightning-fast Amiga is turned into a snail by the massive calculations needed to create a ray-traced art screen, because the results of patience can be rewarded by some of the finest images you can see on any home computer: the famous juggler demo, moving rocking chair and superb Newton's Cradle were all created in this way.

Ray tracing relies on heavy duty maths but there is no need to be alarmed – the Amiga takes care of the number crunching and leaves the artistic side of things to the user. Out of this complexity comes Art, as the software calculates with absolute precision the points of light on any surface, reflecting and refracting images to create a 3D world on a flat monitor screen. But it all takes time – lots of it – or at least it did until Impulse supercharged their old workhorse, Silver, and created a Turbo version. It still carries on the excellent tradition of the established program – superb control and a stunning integrated animation designer – but the program has been revamped to give both added features and a massive leap in terms of time-saving. What took six hours in the old Silver now takes just 40 minutes in the Turbo version. This astonishing difference has been brought about by some innovative programming.

Impulse have adopted a new technique called Octree which in simple terms splits the screen into a small series of squares and works on each until the job is finished. If there is nothing to work on in an area it will move onto the next. However, highly complex designs will still allow you to go out for the afternoon (around four hours), whereas before, using Silver, you could have gone on a day's outing to the coast (15 hours)!

Turbo Silver is supplied on one unprotected (though security stamped) jam-packed disk. Our copy came with a disk containing the old version too, a manual for that together with addenda notes and temporary documentation for the Turbo upgrade; not a pretty sight to wade through, though I would expect more professional documentation to be shipped with the product very soon.

It requires at least 1 meg of memory and, as it uses a very useful system of virtual disk memory (which means it stores data onto floppy instead of in RAM from time to time), an external drive is preferred.

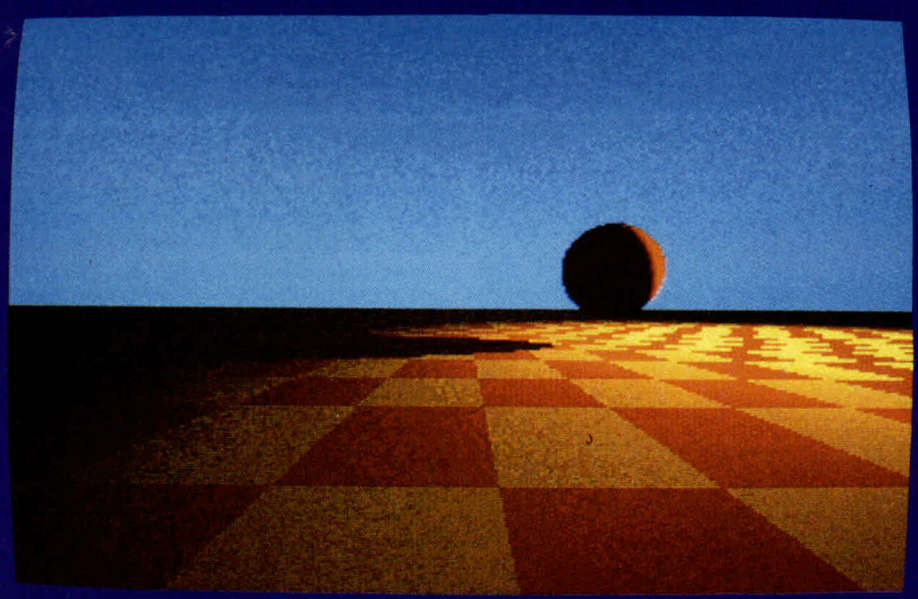
Turbo Silver's world is three dimensional; as well as width and height, objects have depth and any item you create must have dimensions in these planes, which are labelled X, Y and Z. I was surprised to find that Y is the depth plane and not Z which is designated the vertical – confusing to people used to addressing normal flat screen co-ordinates in terms of X and Y. Objects are defined using the program's editor, which allows access to the powerful 3D screen designer and also the animation suite. Making movies is simple but first you need to create some objects on the work surface. It is here that your imagination needs to work overtime.

Objects are shown as wire-frame shapes on a less than stunning display screen. While you are creating you must be able to visualise the effect you are aiming for. However,

SILVER

you can change the point of view, including seeing the scene from above, to ensure your spatial positioning is correct. On a number of occasions, though, selecting this option crashed the computer – something Impulse need to correct quickly.

The program comes equipped with some pre-defined shapes – things such as sphere, tube and triangle – which with careful manipulation can be altered and appended to create any object you desire. Each of these so-called primitives (apart from the sphere) can be edited, though it is possible to create any shape you can imagine, an exercise made simple by spin and extrude options. The point of view of the finished display is dependent on the positioning of a 'camera' – a simple animation technique would be to keep the objects and light source identical in consecutive cells but pan around with the camera in a sort of fly-past. The camera function is very flexible, allowing you to simulate wide or telephoto lenses in any axis and you also have the opportunity to picture a scene from below (how about a trout's-eye view of the riverbank?). The light source can be positioned in a similar manner.



Turbo Silver allows you to wrap an IFF picture around any object and lets you save any ray-traced cell in this format for use in other art packages. This really is only the half of it, because Turbo Silver incorporates some effects which, given a lot of time and experimentation, create the type of visual magic which is the hallmark of promotional videos. For instance, if you create some frames of animation

"It is possible to create any shape you can imagine, an exercise made simple by spin and extrude options"

– perhaps with a digitiser or an art program – you can load the sequence into Turbo animation cells and have the screens mapped as the floor in consecutive frames. Picture it – moving scenes on a terrain which fades to infinity, reflecting in hovering glass spheres. There are many hours of hard work involved but the potential is there to be exploited.

The animation side of the program is made easier by a number of options which can automatically generate cells in which objects take a path specified by the user; again, a lot of brain-work is needed to design the kind of effect you are after and there are so many facets of this technique to get precisely right that launching into anything moderately complex is a major hurdle you just have to leap when your confidence with the program has grown.

Another knock-out feature is the creation of lighting attributes which dictate how any of your objects will bend or refract light. The common ones are available in a menu – air, water, crystal and glass. There is no stopping this program – if you want to view the world through ruby spectacles you can edit the refraction value accordingly (ruby by the way has an index of 1.77, emerald 1.57 and diamond 2.42). However, the higher the index, the longer it takes for the program to calculate the display. A picture of crystal chess pieces on a reflective board which is supplied on the disk took 50 minutes to generate.

All the Amiga's colours are available and all screen resolutions, including interlace. I am also pleased to say that the program works in PAL display. Control of the program is either through a wide selection of pull-down menus or by Amiga/key combinations; there is a vast amount to learn because the program is so wide-ranging and comprehensive. Included on the disk is a player program for showing animations and a screen display utility which can be called from Workbench.

CONCLUSION

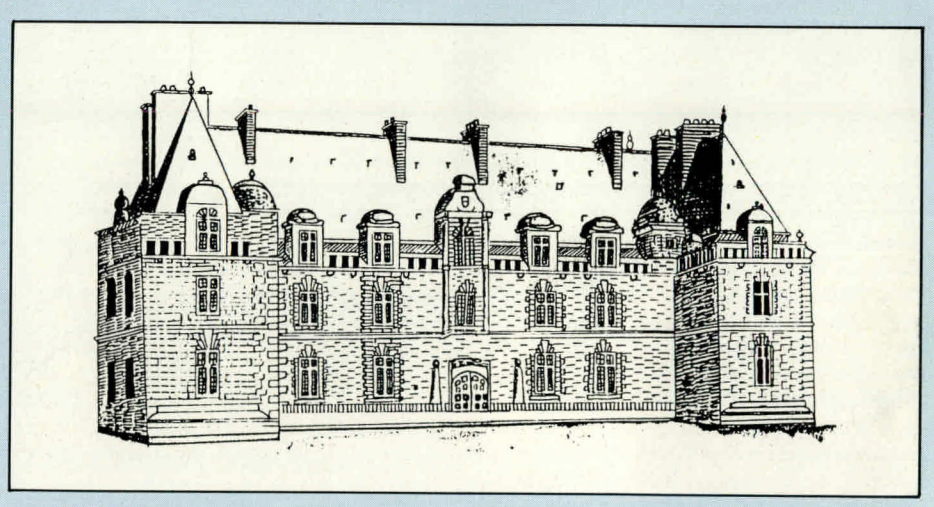
Patience may be a virtue but it is a necessity here. Turbo Silver does not take kindly to slackers – be prepared for hard work and disappointments – but also be ready for some incredible photographic-quality artwork. The documentation as supplied with our copy (admittedly an early release) needs tidying up to make the complex features easier to learn. The time factor will still influence many people – several hours' solid computing to generate some complicated scenes – but when you consider it took 15 hours before Turbo, you begin to see the scale of improvement. Complex, with an amazing array of features, it is an outstanding, if specialist, graphics and animation suite which requires lots of concentration and dedication. Definitely not for those with short attention spans!

Price: £139.95 *P.L.*

Contact: HB Marketing Ltd, Brooklyn House, 22 The Green, West Drayton, Middx UB7 7PQ. (0895) 444433.

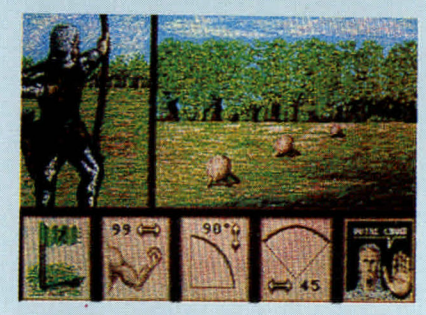
CHATEAU'ED DREAMS

Anthony Mael enters the soignée world of software à la française



There is no denying it . . . the French have un certain style. Visit an American software company and you enter the hi-tech trading estates of California's Silicon Valley. Seek out a British developer and you may end up in the suburban respectability of London's Muswell Hill (see this ***AUI****'s Heard It On The Grapevine for confirmation of that!). But get an invitation to probably the most important software house in France and you are immersed in a different and very much more elegant environment, nothing less, in fact, than a Chateau – a castle, French style.*

The company enjoying these gracious surroundings – the Chateau has a mere 700 acres as its grounds – is UBISOFT. It would not be surprising if you ask UBI-who? Even UBISOFT admit they have not been too well presented to any computer audience outside France, though they have there established a reputation for quality games that has given them a sizeable share of the market. They have chosen to confine their releases to their home country until they had something that stood up to international standards. Now they have chosen to go public with some interesting games they have under development partly because they are so confident that they are onto something good but also because they have just moved into what must be the most impressive context in which any computer games are being created – the aforementioned Chateau.



Chateau Gree de Callac – to give it its full name – is in Brittany and now houses some 20 programmers and a mass of computer equipment – Amigas, PCs, 64s and so on. This all looks rather incongruous in the aristocratic halls of the vast early nineteenth-century building. There are antlers, wild boars' heads and ancient paintings still on the walls. Beneath them an international, though largely French, pack of programmers beaver away at the current seven titles that UBISOFT is promising to launch this year.

They are certainly creating a wide variety of interesting games. Everything from a medieval arcade adventure to an improved Gauntlet clone. All it is claimed to be launched on the Amiga, probably before the end of 1988. With US distribution through Epyx, they look to gain a big audience across the Atlantic.

Their arcade adventure certainly looks impressive. Called Iron Lord, it combines many of the best things that made Defender of the Crown and Faery Tale so successful. If that does not make it terrifically original, it will not lessen the enjoyment of those who see its excellent graphics – all animated galloping horses and evil-looking inn companions with plenty of archery, arm-wrestling, sword-play and even a visit to the local brothel – all in the quest to overcome a treacherous uncle.

Another very interesting game under development is Final Command – a space drama which has what seems at this stage a very strong scenario that requires you to seek out some vital lost data banks and fight for your life while doing so. Here, too, the graphics are impressive with a sense of the James Bond lots-of-activity-going-on-in-a-huge-hangar style, and apparently a whole city to search.

In another style altogether, UBISOFT are creating Skateball – a very slick, fast-moving sports simulation that has big-muscled, enlarged sprites speeding over the ice with a ball, not a puck, to be struck. On the Amiga, it had a very exciting feel and appearance.

The 'incarcerated' programmers were also working on a nice Garrison-type dungeons eat 'em up with fire-breathing dragons as one obstacle to overcome and a horizontal scroller that has the working title of "Dracula" – a name which might not please CRL too much. Watch out for "Bats" too, which has high quality graphics and gameplay.

UBISOFT are associated with Guillemot, France's largest distribution organisation, so they have a very strong base to build on. And talking of buildings, the programmers, from all over France, initially complained because the first night there they were all so spooked after telling each other ghost stories that they

did not want to take the remote rooms reserved for them up on the third floor. They have got used to the place now. They are reported to work all night and sleep all day so they do not get to see much of the countryside around. They don't seem to care though. What other programmers, with a free ticket home each month wherever they come from, can casually say "Drop in and take a look at the Amiga game I'm working on – out at my Chateau . . ."? Not too many, even in France . . .

A.M.

JUMPDISK For the AMIGA

PROGRAMS

ARTICLE MENU: New Text and Art Reader Which You're Free to Use
PRIME-TIME: A Scholarly, Graphic Workshop for Prime Numbers
IFFLIP: Animation, Programming Tool Handles Up to 10 Frames Quickly
COVER: Humor - Otis, the Puppet From Heck, Reveals the Meaning of Life
CRANKIT/ENGINE: An Animated Education in Combustion Engines
MULTILIFE: Something Different Among the Life Entries - You Control It
CHARACTER-GENERATOR: Assign Personalities to Fantasy Game Folk
SLIPPER: Puzzle Game for the Lightyear Excuse Series
PIXAMINER: Tutorial on New Uses of a Picture-Loading Utility
PIPEWORKS: Game - An Infuriating But Workable Graphics Puzzle
FLOWER-GARDEN: For Kids - Make Your Own Pictorial Garden
PRINTPRG: The C-Notes Column Demo Program - Send It to Paper
WRITER: It Will Score Your Writing on Mechanical Style
BUSMOD: You Can Adapt This Model for Outcome of Business Ventures
ADD: Math Education With a Timing Twist
SPEAKALL: Hear or Record All Articles in Issue
PRINTALL: Print All Articles to Paper
READ40: Large Text Article Display

ALL OF THESE PROGRAMS, ARTICLES, TUTORIALS AND NEWS ITEMS FOR JUST £8.50 inc.

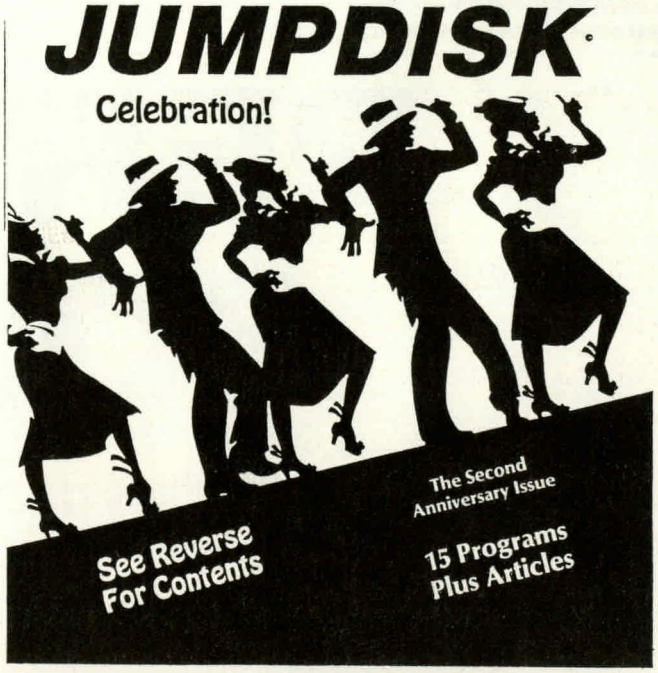
ARTICLES

AMIGA DEVELOPERS CONFERENCE
VIRUSES: The Rumors and the Truths
IFFLIP: Animation Tool or Just for Fun
PRIME-TIME: A Prime Number Workshop
INTERNAL COMBUSTION: Kinetic Education
TXED PLUS & AREXX: Review of a Marriage
BUSMOD: Model the Future of a Business
FLOWER-GARDEN: A Blooming Delight
WRITER: Measure Readability of Writing
AMIGADOS PRIMER: Potpourri of Commands
MULTILIFE: Changing the Environment
CHARACTER-GENERATOR: For Role-Playing
PD DISKS FOR £3.00 EACH: Goldfish
C-NOTES: Using 'C' for Printer Output
C-NOTES: Printprg - The Source Code
NEWSBREAKS: What's Happening
READER TIPS: Making It All Easier

READERS' FORUM: Raked Over the Coals
EDITOR'S THREE CENTS: Big Confession
LIGHTYEAR EXCUSE: Chapter 5 - Slippers
PROGRAM AND WRITE FOR US - GOOD MARKET
SUBSCRIBING: Get It Quick Every Month
READ40: Text Files Make the Big Type
PRINTALL: Sending Jumpdisk to Paper
SPEAKALL: Hear or Record Articles
INSTRUCTIONS FOR THIS ISSUE
HOW TO INSTALL BASIC ON THIS DISK

JUMPDISK published monthly at
1493 Mt. View Ave.
Chico, Calif. 95926
Phone: (916) 343-7658

For the AMIGA MONTHLY MAGAZINE ON A DISK
JUL '88
Vol. 3, Issue 7, No. 24



JUMPDISK IS TWO YEARS OLD! To celebrate we are giving away the latest and hottest music demo around. Order the June and July issues (£17.00) together and its yours FREE! If you have already purchased June, please let us know and we will include the FREE DISK with your July copy (£8.50).

PUBLIC DOMAIN DISKS

We have in stock over 250 of the very best Public Domain disks. If you haven't used or seen PD programs for the Amiga why not try the AMICUS and FISH GOLD DISKS. These contain some of the best programs in each libraries collection. All our PD Disks are only £3.00 per disk or £30.00 for eleven inc. first class post. Here is a selection from the very latest releases.

FAUG#44

MaxiPlan – Comprehensive working demo of commercial spreadsheet program.
XSpell – Spelling checker that proof reads text files.
Insanity – Pre-release demo of game Insanity Fight.

FAUG#50

Rollback – Brings back information that has scrolled off the screen on a CLI session.
Shortcut – Adds menus to the CLI window and builds Macro sets.
DirUtil – V1.0 of marvellous utility that enables CLI operations to be run from menus.
Slideshow – Acrylic on Canvas.

FAUG#52

DirMaster – Very neat little disk manager.
Clickto – A double click on a background window brings it to the front.
PacMan – The infamous game on the Amiga with lots of features.

FAUG#62

Cron –
Addicon – Clones icons for files that don't have one.
HideIl – Cuts out extra memory for programs that run from W/B or CLI.
IFFmir – ILBM displayer with x and y mirroring.
Lander – Display Hack.
FFormat – For those that cannot stand the slowness of DOS format.
Access – V.26 of this colourful Telecommunications program.
Calc – Nice little programmers integar only calculator. Displays Dec, Binary, Octal and Hex at the same time.
Quickcopy – Verifies if required.
Nag – Electronic Appointment Calendar for the Amiga. Good fun and very effective with the reminders.

FAUG#64

WhereIs – Speeds the process of finding files on disks.
WBDeph – Allows 500 and 2000 owners to use 8 colours in Workbench.
Emacs –
Brick – Breakout (Brickout) style game with stereo sound.

FAUG#66

GWorm – Game that requires control of hungry worm.
SetPri – User Intuition Interface. Adjust task priority.
FPEdit – Create different maps for game of Firepower.
DropCloth – Lets you place a pattern or IFF image or both into W/B backdrop.
Access – V.28 of popular multicolour terminal program.
AudioMaster – Working demo of Aegis Sound Digitizer.
TaskX – Real Time Interactive Task Editor.

FAUG#69

Galileo 2.0 Demo – Brings the Universe to your Amiga.
Browser – A programmers Workbench for the Amiga.
Memopad – Excellent W/B utility for reminders, notes, birthdays etc.
TFC – Converts text files (ASCII) from Word-Processors to the proper line terminator.
Moutned – Determines if a volume or file is online.

FAUG#71

Calculator – A scientific/programmer/plotter calculator.
Battleship – Well known board game nicely adapted for the Amiga. Features digitized sound effects.
Movie – Plays back Sculpt-Animate 3D compatible compressed animations.
Features the brilliant demo GhostPool. A must for demo fans.
FF – Useful file search utility run from the CLI.

FAUG#73

Delux – The Infamous game of 'Deluxe Hamburger'. The object is to shoot up all the burgers, fries, shakes and hot dogs that insist on attacking your bottle of ketchup.
ARP – 'AmigaDOS Replacement Project', replaces current DOS in a compatible fashion, so that existing programs continue to work.
Backer – Hard disk backup utility.
Access30 – General purpose ANSI Telecommunications program.
MR – A replacement menu for the Workbench screen. Disguised as a mind mannered menu clock it allows you to run 40 of your most precious programs.
QuickFlix – IFF slideshow and cell animation program. Features demo SandBox.

FAUG#75

Formula – A 3-dimensional function grapher. The function will be scaled first and then it will be graphed on its own screen in the colours chosen by the user.
Debug – Tool for programmers.
Video-Film.x – Breathtaking demo that takes place in outer space. Most of us dream of the time commercial games will look like this.

FISH#139

AmiCron – Background task automatically runs certain tasks. Latest version.
ListScanner – Nice little utility to display all the Exec lists.
ProCalc – Simulates an HP-11C programmable calculator.
RemLib – Removes a specified library or displays some information about all available libraries. Inc source in Assembler.
TurboBackup – Fast mass floppy disk duplicator with enforced verify mode to prevent generation of incorrect copies.
WArranger – Sends a window to the front or to the back without selecting it.
WheelChairSim – Simulator developed to allow the matching of a wheelchair joystick to a childs handicap.

FISH#140#141

SBProlog – Vol 1 and 2 of Stony Brook Prolog (SBP) V2.3.2.Vol 1 contains the executables and libraries. Vol 2 contains the C and Prolog source code. A Prolog system for Unix.
In addition to providing a compiler SBP also offers advanced features such as dynamic loading, mixing of compiled and interpreted code, macros, extension tables, a debugging facility offering two levels of tracing, profiling tools, and other utilities.

FISH#142

Diff – Uses the same algorithm as the Unix diff program.
FracGen – Generates fractual pictures from "seeds" that you create. Unlike any of the other "fractal generators" I've seen.
SciSubr – Recommended for those doing Fortran work.

FISH#143

Rim – RIM-5 (Relational Information Manager) is a full relational DBMS that is suitable for VERY large databases using B-Tree data storage. Includes a built in HELP database and a programming language. Full Fortran source code and doc included.

FISH#144

Analyticalc – Latest improved version of popular spreadsheet program.

FISH#145

Csh – Latest version of csh like shell.
DMouse – Versatile screen and mouse blanker, auto window activator, mouse accelerator, popcli style programmable command key, pop window to front, push window to back etc. Very useful.
DNet – Link protocol that provides an unlimited number of reliable connections between processes on two machines.
Tab – Tablature writing program for the Amiga with instruments for a banjo and string guitar.
TinyProlog – VT-PROLOG is a simple prolog interpreter provided with full source code to encourage experimentation with the PROLOG language and impelementations.

WHY BUY P.D. DISKS FROM US?

We are Amiga enthusiasts and only sell products related to the Amiga ★ All our P.D. disks are guaranteed ★ We only use the best media – Sony DS/DD Disks ★ Our prices are inclusive, there are no extras ★ If you experience problems using P.D. software we will always try to help ★ The latest P.D. releases in the U.S.A. are Fedexed to us as soon as they are available. If you would like to know more about the world of P.D. for the Amiga, why not send £3.00 for the NEW JUMP DISK DIRECTORY DISK, OR £19.99 for the PD STARTER PACK (8 disks).

We are GEORGE THOMPSON SERVICES – Our address is: FREEPOST, DIPPEN, BRODICK, ARRAN, SCOTLAND, KA27 8BR Our telephone No. is: (077082) 234. Please send a cheque (with your Bank Card No/Expiry Date on the reverse) or P.O. for the appropriate amount and we will despatch your order immediately.

PERFECT SOUND

Sampling the delights of a new sound digitiser, Peter Lee finds that the quality speaks for itself...

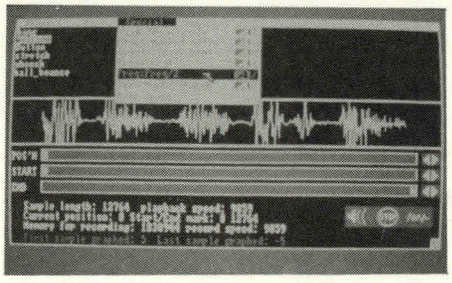
'You ain't heard nothin' yet', said Al Jolson in the early sound movie The Jazz Singer. That was 61 years ago and it marked a turning point in the history of the cinema. The arrival of the Perfect Sound Digitiser may have signalled a similar watershed for Amiga users, allowing the sampling, editing and storage of stereo sound on your own computer.

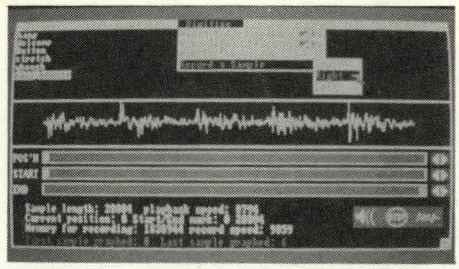
A digitiser samples the waveform on incoming sounds – it could be music, a gunshot or the roar of a crowd – and translates it into numeric data for storage and manipulation in the computer – a sort of high-class tape recorder. Because of its quality, this same digital recording technique is used in the manufacture of compact disks and in recording studios – it really is state of the art. While it may not be studio quality, Perfect Sound allows you to digitise sounds in stereo or mono, edit them and incorporate them into compatible programs.

The hardware is small – 13cm high, 6cm and under 2cm deep. It plugs directly into the Amiga's parallel port and pokes over the top of the CPU. There are phono-socket connections for left and right sound channel input and two small knobs for adjusting gain on each of the channels. A point to note is that the audio signal can be taken from most output sources (for instance speaker jacks on cassette players) but the best quality results are only obtained by using equipment which provides line-out connections – generally these are better quality audio units, CDs and the audio out from video cassette recorders. In any event, you have to provide your own cabling. It is not possible to hook a microphone directly to the digitiser, so if you want to digitise your voice, you either have to put it on tape and play it back, or use a mike connected to a unit which has line-out, or use a pre-amp for the microphone. In testing these options I found the quality was excellent throughout, though the CD – as you would expect – gave by far the crispest results.

The gain control on the unit has to be set for each sample and sometimes during the digitising process itself. This is made quite easy by the ability of software to pass the incoming data directly to the speaker in the Amiga monitor. You simply adjust the control until what you hear is what you want, then you can start recording. Alternatively you can select a menu item which gives you a numeric read-out of incoming signals and then adjust the gain knobs until the sample peaks at 255 and drops to zero. This numeric display is also vital in adjusting stereo input which should have identical gain settings. A recording can then be started simply by pressing a mouse button. The amount of data you can record is limited by your Amiga's memory.

'You simply adjust the control until what you hear is what you want, then you can start recording.'





The Perfect Sound software comes on an unprotected disk and contains a sound editor, information on creating IFF files, the actual source code for an earlier version of the program and several high-quality sampled sounds. Pull-down menus are supplemented by on-screen control icons and there is a graphic waveform display of your sample.

Digitising is so simple you tend to lose track of the technical magic that is actually going on! You can digitise the left or right channels independently as well as both for a stereo take, then work on the data by means of the editor, which allows you to treat a sound sample as a word-processor treats text – parts can be deleted, inserted and appended.

The one critical factor in digitising is the speed at which an incoming sound is sampled; Perfect Sound samples the source waveform between 5,000 and 25,000 times a second and it is up to you to decide the rate. Smaller rates mean longer samples – but give poorer reproduction than faster ones. You have to strike a happy medium of quality and memory limitations; a couple of seconds of reasonble stereo sound will eat up 50,000 bytes. At the faster sample rates,

the quality is nothing short of superb; 'is it real or is it digitised' could well be the question! I was happily digitising 20 second bursts of music at modest rates and the only problems I encountered were that the stored data just flooded my disks when I tried to save it; I ran out of storage space before I ran out of digitising ideas and found that lengthy samples – whole songs rather than special effects – were simply too large for an empty disk.

'Digitising itself is foolproof and so simple you tend to lose track of the technical magic that is actually going on!'

When saving data to disk, there are three options: a straightforward IFF, compatible with programs such as Deluxe Video, Instant Music; a straight DUMP which will save the sound data only and COMP, which although saving in IFF format uses a compression technique which cuts file size in half but which I found seriously damaged the quality. The program allows you to load in any IFF standard sound – such as instruments from some of the popular music packages and all the editor's functions can be used on the data. Facilities here are adequate, allowing slowing down or speeding up of playback, flipping portions of the sample (believe me, Jean Michel Jarre sounds interesting played backwards), cutting and copying and adding portions of other samples.

Once an instrument has been loaded, you can play the different octaves by using the function keys. Obviously you need to be able to re-save any instruments you have amended and there is a very convoluted method of achieving this. It works though, which is the main thing; using this feature enables you to create some outstanding instruments. You could even build up a catalogue of guitar, piano and percussion sounds digitised from favourite records.

'Believe me, Jean Michel Jarre sounds interesting played backwards.'

Permission is given for purchasers to distribute the program's editor executable module, to enable them to pass their digitised sounds to friends.

The manual is brief and to the point; the system is very easy to learn, though I am surprised there is no warning only to fit and remove the digitiser when the computer is switched off. It may go without saying – but they should say it anyway!

CONCLUSION

A picture may be worth a thousand words – but to actually get your computer to say so in your own voice proves a big kick. Once the initial excitement has worn off – after you have digitised and played back your favourite songs – you will have to justify the purchase in terms of usefulness. There is plenty of scope for entertainment – adding effects to video presentations and creating instruments for music packages. Perfect Sound is easy to use and it creates samples of exceptional quality. The only two faults I experienced were the lack of any help on running sounds from your own Basic programs, or from the CLI to by-pass the editor – annoying absences for home enthusiasts. But in terms of cost and quality, Perfect Sound is highly recommended.

P.L.

Price: £79.95

Contact: Precision Distribution, 6 Park Terrace, Worcester Park, Surrey KT4 7JZ.

EAZYPRINT

AMIGA A500 – £355 INC. VAT

1084 MONITOR – £210 INC. VAT

LARGE AND EXPANDING RANGE OF SOFTWARE ALWAYS AVAILABLE

NORTHUMBERLAND HOUSE
DRAKE AVENUE
GRESHAM ROAD
STAINES, MIDDX TW18 5AJ

TEL: 0784 66744

(916)

THE ELEVENTH OFFICIAL COMMODORE COMPUTER SHOW

The show all Commodore users were waiting for? Was the wait worth it? Al Meric was there looking for the new and exciting – he reports . . .

The sun has the amazing ability to lure computer users out from their dark, mysteriously haunts. Each year millions of ashen faced people join the rest of society to frolic in the sun (in England? Ed.) and recharge their internal batteries. It comes as no surprise then that many of the computer industry's suppliers find this a lean time. It is fairly common for software and hardware manufacturers to hold back BIG products during the peak summer months when buying is at its lowest. Instead, more of the run-of-the-mill goodies are released and everything goes for bargain prices just to keep things ticking over unitl the autumn build up for Christmas. This year's Summer Commodore show did not give any indication that the usual Summer lull was going to be shattered.

The first day at the show started off with the almost obligatory press conference. Commodore UK's Managing Director, Steve Franklin kicked it off with the usual greeting and introductions before passing the proceedings over to Kristian Anderson, Commodore's North European director. Kristian Andersen reaffirmed Commodore's commitment to the UK market and told the assembled press that Commodore had decided to begin a massive mutli-million pound marketing investment in the UK this year. He also spoke of Commodore's intention to commence their biggest ever advertising campaign sometime in July. Of this, he said, a major portion would be dedicated to capturing the lion's share of the leisure market. We were also told to expect some new 68020 product later in the year and that an AT bridgeboard was close on the horizon. That was pretty much it, so with the press conference over it was time to get down to the real business – trying to see every stand at the show in a logical and orderly fashion without visiting any stand more than seven times.

After only a few minutes of fighting through the crowds it became apparent that this was the show for the bargain hunter. Prices were being pruned everywhere. Even Commodore got in on the act by officially reducing the U.K. price of the Amiga A500 by £100.00 to match the price of the Atari ST at£399.00. However, towards the end of the first day Amiga 500s could be picked up for as little s £339.00 while 3.5" external drives were almost being given away at £75.00. One exhibitor was offering 6 Amiga games for only £10.00. Several stands had Amiga programs for under £5.00. Even the recently announced Excellence! Word-processing package was available with a £50.00 discount. Unfortunately, pricing cutting was rife. As one stand reduced a price, another stand would lower his even further and so on throughout the duration of the show.

In one instance two adjacent stands reduce the price of similar products several times in the space of only one hour. It eventually got to the point where many exhibitors were selling goods at only marginally above cost; 'Unfortunately' because of the adverse effect it has on the industry as a whole. Dealers start working with ridiculously low profit margins, which in turn means they have to move more stock. This reduces the amount of time they can afford to spend giving users help and advice. It is not surprising, the, how many companies disappear as quickly as they came.

'Over 700,000 Amigas have been sold to date'

So what was new? On the first day of the show on our own **AUI** stand we had the only publicly available copy of INTERCEPTOR. This fast flying, combat simulation/arcade game had people drooling and pleading to buy a copy. It was not until the following day that copies were on sale. **AUI** was also able to demonstrate Discovery's Zoom and two as yet unannounced games from Germany, of which more details will appear in Amiga User International in the near future. Microtext demonstrated their new Amiga Teletext adaptor and were besieged by businessmen keen to find out if this powerful programmable data receiver would fulfill their needs. AmigaLand on their two impressive stands were showing off the VD3 colour frame grabber, an A3 graphic tablet, the Bernoulli removable cartridge 20 Meg drive and a combined 5.25" and 3.5" disk drive unit. Dr T's KCS V1.6 MIDI sequencer filled the air with pulsating multi-track sounds. Ariadne Software and SciCom were both vying for a slice of the interactive video market with their latest hardware, software combinations. Commodore, hidden from view within their space age pyramid style stand, took their chance to air the new PC1 and expansion unit. At its new price of £369.95 it became a viable alternative to the Sidecar and A2000 Bridgeboard.

At the lower priced end of the market several interesting 'gadgets' had made an appearance: A selection of A500 stands, designed to support monitors, units that plug into both joystick ports and via a switch enable any combination of mouse and joystick to be selected, low cost sound samplers, 3.5" disk cleaners, anti-static mouse pads, mouse covers and many more. Rumours of the imminent release of a Freeze frame type device wee also abundant.

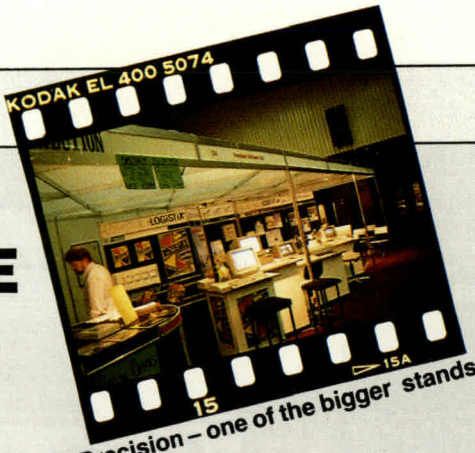
During the course of the show the Independent Commodore Products Users Group (ICPUG) held several question and answer sessions. These were open to all and proved to be very popular. Amongst the ICPUG panelists was Commodore Guru Jim Butterfield who held the audience captive with his wry humour and impressive knowledge of Commodore Computers.

Friday Evening saw the first UK developers meeting, where over 100 developers got together to discuss ways of improving communications between themselves and Commodore. Dr Rahman Haleem, CBM's Technical Support Manager, spoke of Commodore's commitment to achieving this objective by providing a worldwide technical support network for developers everywhere. This, he said, would eventually include an online database facility. Rick Glover, Rahman's European counterpart was questioned about the number of Amigas thought to have been sold around the world. To this he said that based on figures he had recently seen, over 700,000 Amigas have been sold to date and that the Amiga A500 was no longer seen as a 'might-make-it-one-day' machine but that it had indeed made it.

For the public it was a show full of good buys. For the traders it was a weekend of box moving and high spirited competions. For us it was a fairly uneventful show but one that left the feeling that the Amiga had eventually reached maturity and that the computer industry had at last regained its balance.

A.M.

THE (CANDID CAMERA!) COMMODORE COMPUTER SHOW



Precision – one of the bigger stands

A delighted bargain hunter

Any offers for this fine interface?

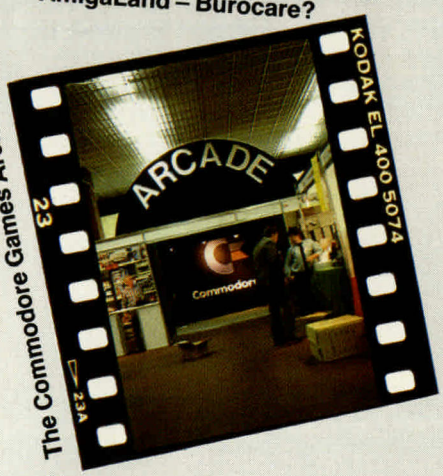
Burocare's Polaroid Palette

HB Marketing's stand

AmigaLand – Burocare?

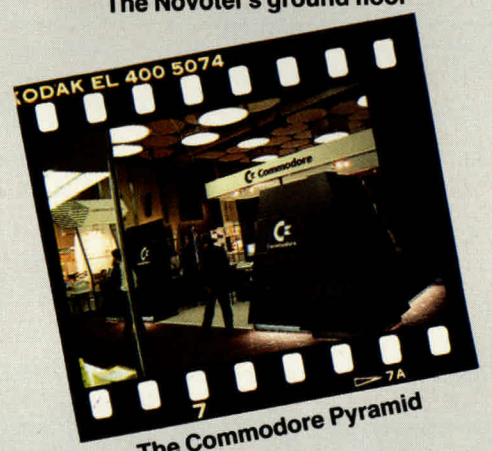
Amiga Centre Scotland

The Novotel's ground floor



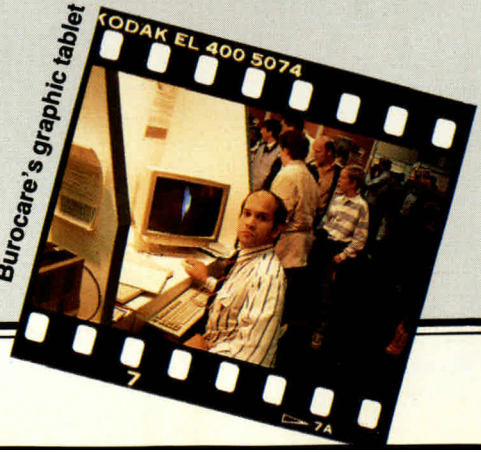
The Commodore Games Arcade

Triangle Television's Dr T. Setup



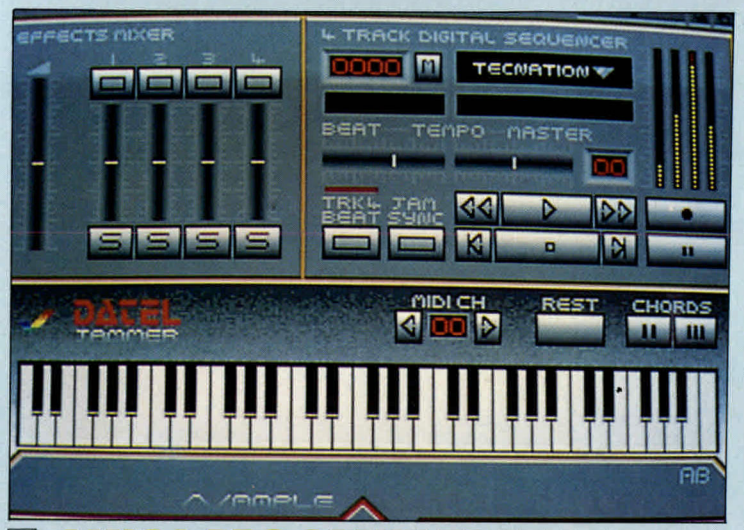
The Commodore Pyramid

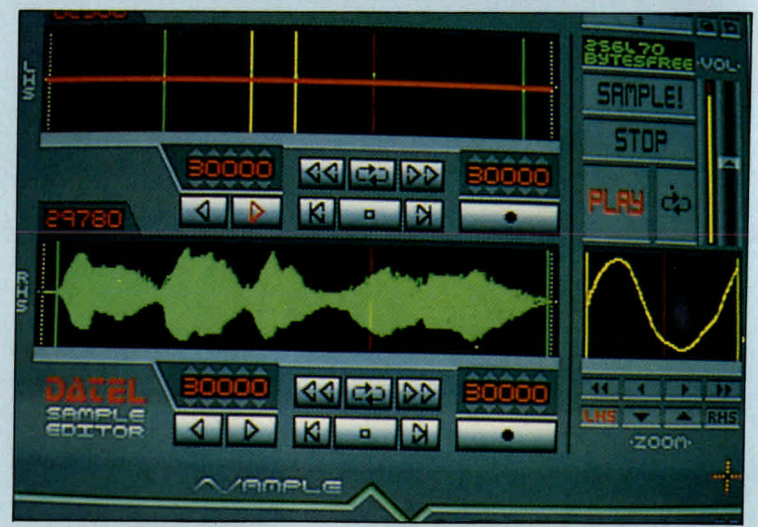
AUI demonstrating Discovery's Zoom



Burocare's graphic tablet

DATEL ELECTRONICS





AMIGA PRO SAMPLER STUDIO

- A top quality sound sampling system at a realistic price.
- All the usual features of a sampling system plus many more.
- 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 and playback speed.
- Separate scroll line waveform windows plus zoom function with Edit windows for fine accurate editing.
- Hardware compatible with many other software packages.
- Software files can be used within other music utilities.
- Reverse, copy, mix, clear plus other edit facilities.
- Microphone and line input ¼" Jack and Din connections.
- 3D shot of sound waveform. Wave editor to design your own waveforms or adjust existing ones.

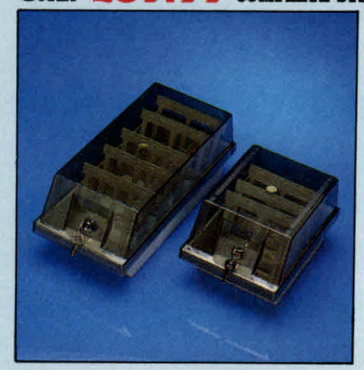
ONLY £69.99 COMPLETE SYSTEM, PLEASE STATE A500/1000/2000

DATEL JAMMER

To complement the Sample Studio the Datel Jammer gives you a 5 octave keyboard to play and record your sampled sounds.

FEATURES:

- 2 and 3 note chords.
- 4 track sequencer up to 9999 events.
- Tempo and Beat Controls.
- Mixer Controls on Instruments.
- Load and Save sequence.
- Works on standard IFF file sounds.



DISK/STORAGE BOX OFFERS

- DD40 holds 40 3½" disks lockable.

ONLY £6.99

- DD80 holds 80 3½" disks lockable.

ONLY £8.99

- Disks – 3½" D/DS/D.
- Top quality, bulk packed with cables.

ONLY £22.99 FOR 25.

DATA/SWITCH BOXES

- A/B type connect two printers to one computer or (vice-versa).
- Centronics connections or RS232 (Serial) connections (25 pin) please state.

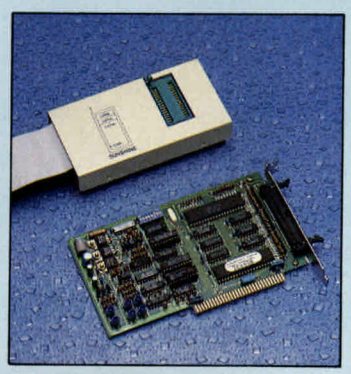
ONLY £24.99

- ABC type connect three printers to one computer (or vice versa).
- Centronics or RS232 connections.

ONLY £34.99

- Intelligent Printer Sharer.
- Share one Printer between four computers.
- Automatic switching – no need to leave your computer.
- RS232 serial or Centronics connections – please state.

ONLY £79.99



EPROM PROGRAMMER

- Easy to use, highly efficient Eprom programmer.
- Programs 2764/27128/27256/ 27512 Eproms.
- Programs 12.5v or 21v.
- NMOS and CMOS types.
- Load and Save File functions.
- HEX and ASCII Dump of Memory.
- Menu driven Program features. BLANK, READ, BURN and VERIFY functions.
- Zero Force insertion socket.
- A500/2000 or 1000 model (please specify).

ONLY £39.99 COMPLETE

PRINTER CABLES

- 25 pin 'D' to 36 way Centronics parallel lead.
- A 500 or 1000 please state.
- 1.2m length.

ONLY £7.99

- 25 pin 'D' to 25 pin 'D' – serial printer lead.
- A500 or 1000 – please state.
- 2m length.

ONLY £7.99

ROBOTARM — Full Function — 5 Axis Movement

- Explore the fascinating science of Robotics with this full feature Robot Arm.
- Human like dexterity – with 5 Axis of movement it is so versatile. It can manipulate small objects with amazing ability.
- Easily controlled using 2 Joysticks (any 9 pin type) or connect to your Amiga with our Interface + Software to give Computer/Robotic control (see Interface offer).
- Comes with Accessories including 'Finger' Jaws, Magnetic Attachment, Shovel Scoop, 4 Stabilizing Suction Base Legs, etc.
- Uses 4 HP2 batteries (not supplied) to power motor movement so uses no computer power.
- Self contained, ready to use (except batts, joysticks).

ONLY £39.99

INTERFACE OFFER

- Unique Software/Hardware package to allow you to interface your Amiga with the Robotarm.
- Train mode allows you to store and then repeat movement sequences.
- Very easy to use.
- This Interface is not needed to use the Robotarm but interfacing with your Amiga has great possiblities.

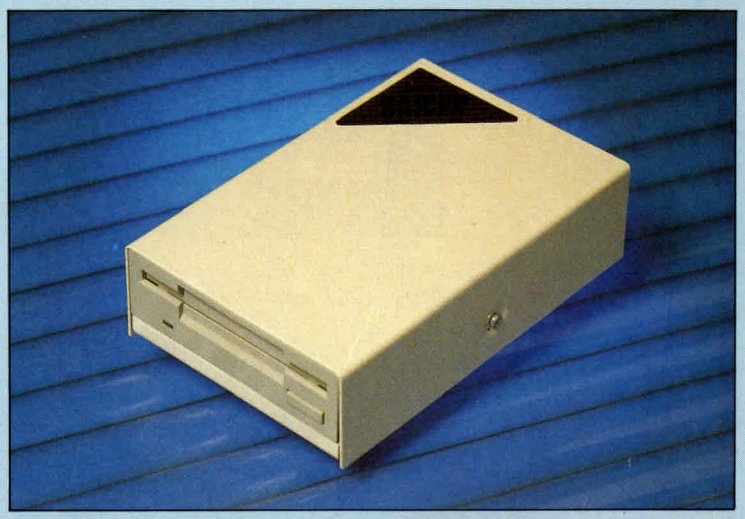
ONLY £19.99
COMPLETE WITH CABLES.

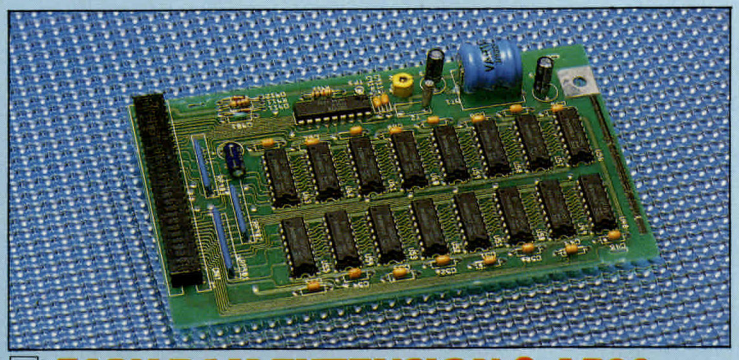
DATEL ELECTRONICS

EXTERNAL 3.5" DISK DRIVE

- Slimline extra low profile unit – only 6" long!
- Top quality NEC drive mechanism.
- Throughport allows daisychaining other drives.
- A superbly styled case finished in amiga colours.
- Fully compatible.
- 1 meg unformatted capacity.
- Good length cable for positioning on your desk etc.
- **Value for for money** – before you buy a drive, please compare the features – this drive has an NEC drive unit and is housed in a superb housing – many units available are built to a price and not to a standard. Don't spend a few pounds less and end up with 'rubbish' – and remember your are buying from the manufacturer.
- Complete – no more to buy

ONLY £114.99 POST FREE
ADD (£5 for Courier delivery if required).

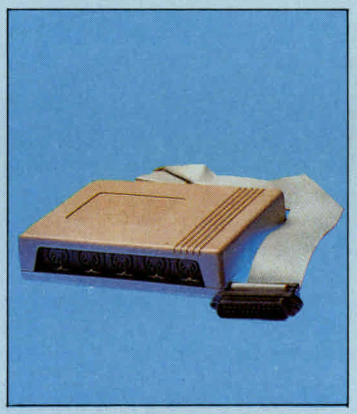




512K RAM EXTENSION ● A500

- Available with/without calendar clock option
- Simply plugs internally into a A500 slot
- Switch in/out with switch supplied
- Fitted in minutes – no soldering etc.
- With calendar/clock onboard time/date automatically booted
- Battery backed to retain time/date

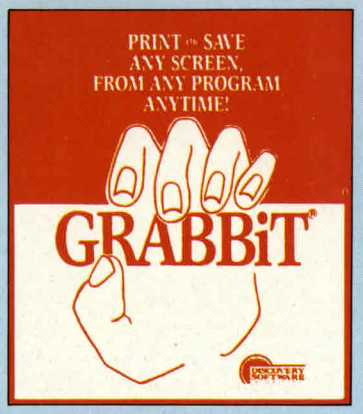
ONLY £79.99 FOR STANDARD 512K CARD OR
ONLY £89.99 FOR VERSION WITH CLOCK/CALENDAR



MIDIMASTER

- Full Midi Interface for A500/ 2000/1000 (Please state model)
- Compatible with most leading Midi packages (inc. D/Music)
- Midi In – Midi Out x 3 – Midi Thru
- Fully Opto Isolated
- No need to pay more – Full Midi standard

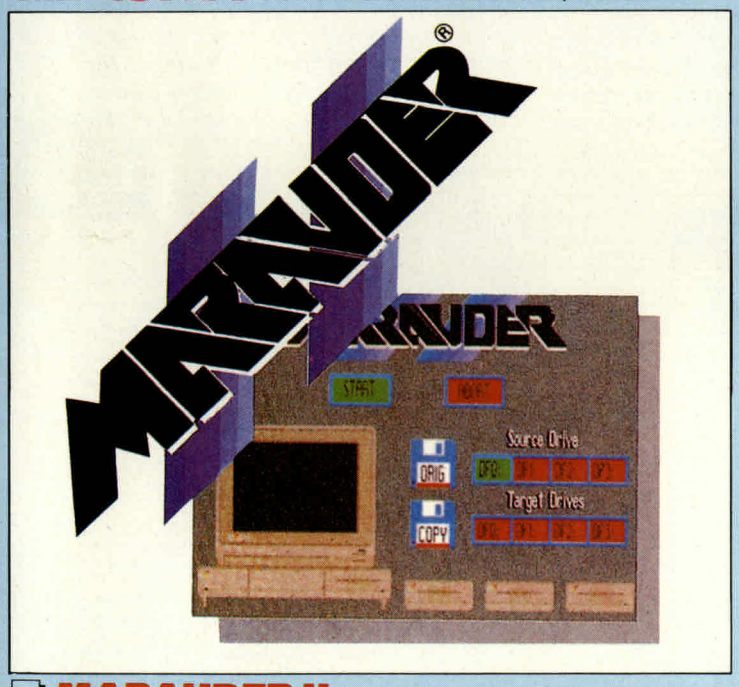
ONLY £34.99



GRABBIT

- Grabbit is a transparent Screen Grabber program
- Always there – simple key operation
- Drives dozens of Printers
- Requires only 10K Ram
- A true productivity tool!
- Very quick operation – does not require screen on during printing
- Free "ANYTIME" program lets you update your own colour palette preferences.

ONLY £21.99 POST FREE



MARAUDER II

- **Quite simply the best disk copier available for the Amiga (all models)**
- Superfast disk copier will copy almost any commercial disk
- Friendly user Interface – Mouse driven throughout.
- Completely compatible with Amiga multitasking system
- Even decrypts many encoded programs including D.Print/Video/ Paint/Music/II etc.
- Special 'Strategy Files' cope with even the most advanced protection schemes
- Supports upto 5 drives simultaneously for multiple copies
- Regular updates available – we always ship the latest
- Fast operation – typically around 80 seconds
- USA's top selling copier

ONLY £29.99 POST FREE

ALL ORDERS NORMALLY DESPATCHED WITHIN 48 HRS

HOW TO ORDER . . . .

BY PHONE	BY POST	BY FAX
0782 273815 24 hr Credit Card Line	Send cheques/POs made payable to 'Datel Electronics'	0782 744292 UK ORDERS POST FREE – EUROPE ADD £1 OVERSEAS ADD £3

DATEL ELECTRONICS

UNITS 8/9, DEWSBURY ROAD, FENTON INDUSTRIAL ESTATE, FENTON, STOKE-ON-TRENT.

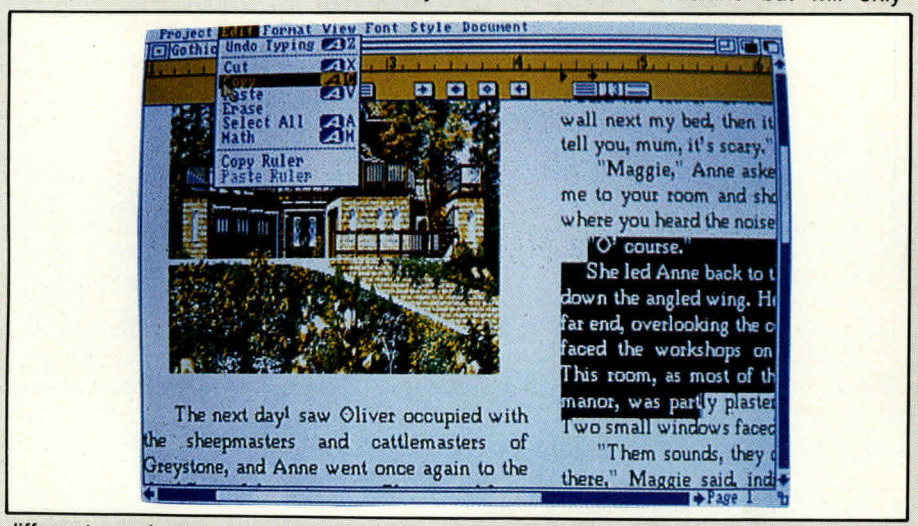
SALES ONLY	TECHNICAL ONLY
0782 744707	0782 744324

EXCEL

How far can a program called Excellence! live up to its name? Peter Lee sizes up this new word-processor from the creators of Scribble!

Micro-Systems Softwre have one of the first and perhaps best-loved word-processors for the Amiga-Scribble!. OK, it has its faults but it never lets you down and does a decent job of getting text from the screen on to paper. So, any new word-processor from this company has a lot to live up to. The publicity alone for the new program might lead some people to think a new era was dawning for writers. It is not. Excellence! certainly has a lot to recommend it and contains features well ahead of the competition – but the competition may not be considered all that hot in this field at present. Nevertheless, if you are expecting a new, improved version of Scribble! I may as well shatter your illusions straight away. It bears no resemblance at all, but then, of course, nobody promised it would, for Excellence! is an entirely different product, aimed at a different market. Excellence! is a graphic word-processor, using fonts loaded from disk and images imported from paint programs. Printouts take the form of graphic dumps and while all this leads to true WYSIWYG output (apart from the irritating fact that the screen display is double the height of the printout), it leads to a serious cae of oé'ja vu . . We have seen the like before in a number of similar word-processors – Pro-Write being possibly the closest example – with remarkable similarities between the two programs. However, to be fair to Excellence!, my expectations should not be a measure of its value and it contains a varied selection of features worthy of anyone's considertaion, especially people interested in semi-DTP work. Indeed, it has some attributes which are really outstanding; such as the thesaurus, grammer checker, style information and glossary creator – more of which later.

Excellence! comes on two disks; the first is only a Workbench disk and the program itself takes up other unprotected disk. A fat, ring-bound manual in the boxed 'serious user' style completes the package. The program will run on a standard 512K machine but will only reach its full potential with 1 Meg of memory – graphic displays require a large storage overhead.



You enter the word-processor either by clicking on its icon, or clicking on an already saved document. After a lengthy load-time it presents you with a pretty standard text-input screen containing several control icons and ruler information. Page lay-out can be controlled by selecting one of the four line format icons (flush left, right, justified and centered) and by moving small markers along the ruler, margins, tabs and indents can be locked in.

Being a graphic word-processor, Excellence! allows a selection of fonts to be used throughout your document. At least Micro-Systems have gone to the trouble of adding some useable typefaces to the standard and by now tired, old Amiga repertoire. Lack of memory can hinder the number you use in a document as each font is retained once loaded. Memory is also at a premium when multiple documents are open simultaneously. The program is clever enough to remember which font was used in any word, so if you have to make changes, the correct face and styles are automatically generated as you type.

Probably the main benefit of using this graphic-type of word-processor over conventional ons such as Word Perfect or Scribble! – apart from the multiple font option – is the ability to load in images. This makes Excellence! more of a desk top publishing aid than a rival to the serious text-only programs. However, only eight colours are supported so this tends to nullify some of the benefits of graphics for all but the simplest drawings. Company logos, letterheads and handbills are fine – digitised pictures are sophisticated artwork are out, though the program does make a stab as converting images into just eight colours, sometimes with rather pathetic, mangled results! Wondering how your art masterpiece is going to turn out is a bit like Dr. Frankenstine waiting for the monster to wake up . . .

Text can be input using any of the colours on any of the eight background colours and a wide range of printers are supported, with the ability to control print density for better results than the normal Preferences selection allows. PostScript is supported and there are some compatible fonts on the disk.

As a word-processor, Excellence! contains the usual batch of standard features – apart from overtype mode. This presents no difficulties as a similar option is implemented, called Replace. This allows you to highlight a word with the mouse cursor and begin typing. The unwanted word disappears and your new text is entered. In keeping with its DTP

LENCE!

leanings Excellence! supports multiple newspaper-style columns and a well-used tool of the publishing trade, a hyphenation system. When invoked this will try and split words which are too long for the line. This is all very well until you start finding bad breaks – things such as Beeth-oven or dil-emma. Luckily an exception dictionary is supported where you can specify the points in a word where a hyphen is allowed.

One useful feature which did impress me was the ability to define a glossary – a sort of chipboard for marked text and graphics. In this way your letterhead can be saved and re-used as needed. In fact you can define a key press combination to insert a specific item from the glossary – a kind of macro call. As well as simply loading in an item, these macro calls can excute a small series of commands in a mini-programing language. In this way you can simplify any menu selection and atuomate input. For instance the macro (menu font, garnet, 9 point) once stored under a key will change to the specified font when pressed.

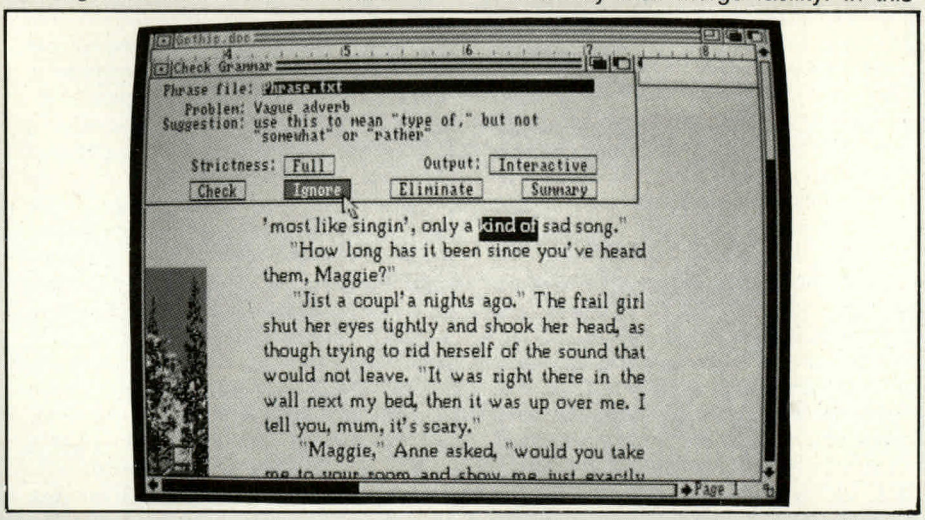
'Excellence! supports multiple newspaper-style columns and a well-used tool of the publishing trade, a hyphenation system'

Because only a portion of a page is displayed at any one time, you can provide the entire page as a scaled-down version to give a taste of the finished product before printing. Text is illegible but you do get the feel of the overall design.

Images loaded into a document can be re-sized, sometimes with unpredictable results – which means you may have to load them in all over again because this size feature cannot be un-done. It is also sad to see that there is no ability for text-flow around a loaded graphic. While you cantype at the baseline of the image, it is not possible to input text alongside. This seriously curtails the program's potential, preventing as it does pictures being surrounded by text. This oversight is the single worst feature, stifling an area of creativity and negating the claim made by Micro-Systems that Excellence! is 'perfect'. However, it must be said, it is a fault very common to many of its competitors too. And anyway, one man's – or company's – perfection is another man's . . . Among the more worthwhile features is a spell-checker which, for those who have room to spare, can be loaded into memory from start-up. This makes using the continuous check very fast – start typing your document and any unrecognised words are indicated. A supplementary user dictionary can be created to suit your needs but unlike Scribble! which requires a merge program to add new words to the existing dictionary, Excellence! stores them in text editable form so additions and amendments are made more easily.

Style is a very personal thing but there are some when help is needed. Excellence! boasts a style checker of sorts, though I would not give tuppence (hackneyed, outdated cliched phrase) for it! Who do Micro-Systems think they are to tell a writer that by using the word 'indicating' they are 'overstating or being pretentious' – indicating a restrictive view of things based on the lowest common denominator. This feature, apart from being annoying and probably of more use to people who speak in terms of 'ongoing situations peaking at a ceiling of 500%', seems arbitrary and is not user-definable. As if this ticking-off were not enough, a graph is then displayed which measures your performance – or lack of it. Of more use is the in-built thesaurus, which when asked will supply variations on the word hilighted – antonyms and synonyms. This is a big help to busy writers and is a worthwhile additionto any word-processing program.

Among other features are those all word-processors with aspirations to professional use require – headers, footers and footnotes. These, together with the ability to generate a table of contents or an index provide very valuable additional tools. Excellence! also supports a rudimentary mail merge facility. In this way you can send the same letter to lots of different people whose names and addresses are kept in a separate file.



CONCLUSION

Excellence! has a lot going for it – the idea it incorporates are wide-ranging and useful. I was, however, left wondering if Micro-Systems had not somehow slightly missed their target. They opt for a graphic word processor but pack in all the ordinary text manipulation a Scribble! user would give his or her right arm for (even if it meant typing one handed!) I think it may not quite work as a whole. Probably Micro-Systems have tried too hard to be all things to all users and the frills just get in the way of what a word-procesor is supposed to do: allow you to get your ideas down on to paper. Excellence! actually succeeds more as a desk top publishing program than a WP and even then there is the gripe about graphics preventing flow-around text. Micro-Systems have not been shy in naming their product – so I shall be equally forthright and simply say that Excellence! isn't.

P.L.

Price: £199.95

DISK-2-DISK

As more 64 and 128 owners migrate to the Amiga, the need to be able to transfer data between the differing formats is growing. Alastair Statham, equipped with just about every computer ever made by Commodore, investigates a possible solution.

I wonder how many Amiga users once used a Commodore sixty-four. Given the tremendous loyalty people seem to show towards Commodore I bet there are quite a few, including some who were even PET owners. Commodore possibly enjoyed substantial loyalty even though each new breed of machine had a major area of incompatibility with its predecessor. The VIC and Sixty-Four did not support the IEEE-488 peripherals required by the old PET, so everyone had to either buy an expensive adapter or get new disk drives and printers. Then along came the Amiga with, you've guessed it, no interface for either type of peripheral. It may well make sound marketing sense but it does nothing to help me get all my PET, VIC and 64 data onto my Amiga. Thanfully CCS (Central Coast Software) are offering an easy solution called DISK-2-DISK.

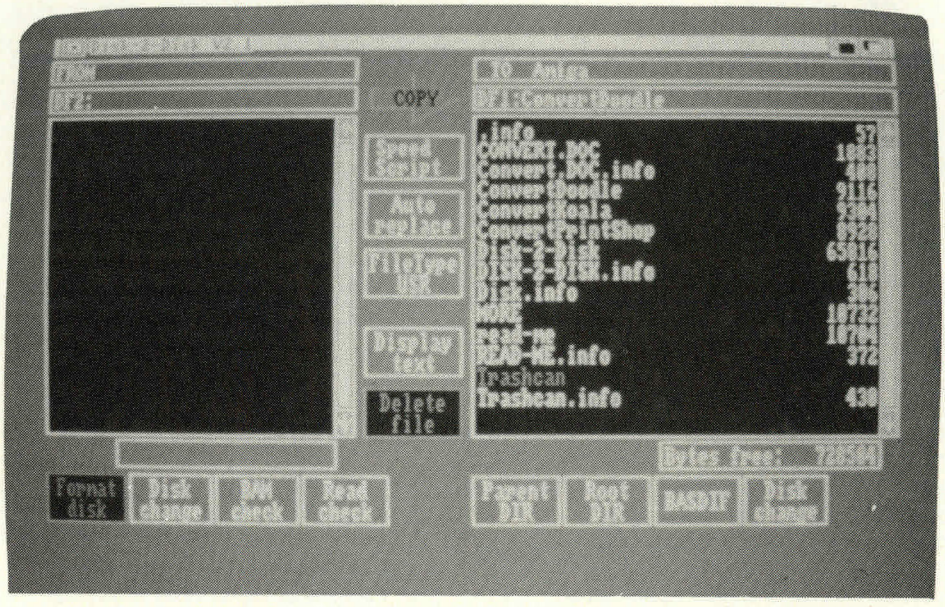
Disk-2-disk transfer C64/C128 format files to and from AmigaDos. It supports both 1541/4040 and 1570/1571 disk formats and can even cope with 1541 flippies. 8050/8250 formats are, not surprisingly, unsupported. The new 1581 3.5-inch C64 format is also missing from the repetoire. Sequential, relative and user format files may be copied in either direction although REL files are treated as if they were SEQ or USR and all side-sector information is ignored. All that is needed to run Disk-2-disk is an Amiga with at least 256k of RAM, AmigaDos 1.1 or 1.2 and an external 5.25-inch disk drive configured as either 'DF1:', 'DF2:', or 'DF3:'. Although it can copy both binary and text files Disk-2-disk does not make program files executable on the Amiga. If a BASIC program is transferred as a LISTed SEQuential file file instead of a PRG file it can be tailored to run on the Amiga. A function of Disk-2-disk caled BASDIF will the BASIC statements which need to be altered and make them into remarks by prefixing the line with REM***. Conversions between PET ASCII and standard AMIGA ASCII is also a built-in function, as is the deletion and display of files, wild-card filenames and disk checking.

'Sequential, relative and user format files may be copied in either direction'

Disk-2-Disk is supplied on a single unprotected disk and can be run from both intuition and the CLI. It comes with a small but complete handbook supplemented by a READ.ME file on the disk containing the latest hints, tips and amendments.

Having brought up Workbench and placed the D2D disk in a 3.5-inch drive you can either click on the disk icon and then the D2D logo icon to begin execution or enter 'DFn:Disk-2-Disk' from the CLI. In both cases you are greeted with a welcome screen which explains why it is morally abhorrent to rip off Amiga software. A PROCEED gadget gives entry to the screen from which all the functions are driven without any need to use drop-down menus. D2D will only run properly in eighty column mode so anyone defaulting to sixty column mode in their preferences will have to change to 'TEXT 80' before using D2D. When it starts up D2D displays the directory contents of the default C64/128 drive and the current AmigaDos directory. The default C64 drive is DF2: but clicking on the drive gadget will easily alter its address to another external drive.

To process a file it must first be selected by clicking on the name of the file you wish to work on. The familiar scroll-bar technique is used to move about the alphabetically sorted directory listings. The default Amiga directory is the current directory at the time of execution but this is easily altered using either the PARENT DIR/ROOT DIR gadgets or typing the new subdirectory path description into the Amiga filename box. Device numbers, including RAM:, are also set from this box. The selected file is highlighted and the name placed in the filename box. The copy direction indicator is set according to which drive the file was selected from. As C64 filenames cannot contain certain characters or be more than sixteen characters long the name is automatically truncated and all illegal characters removed. If you want to change the destination filename you can edit it as you wish. The selection of files



to copy can include wild-card pattern matching according to the standard Amiga rules.

Once a file has been selected it may be copied. The copy gadget indicates the copy direction which is easily altered by clicking to TO and FROM gadgets. Copying is initiated by clicking the COPY gadget. If the file already exists you are asked whether or not you want to replace it. This prompting may be disabled by toggling the ASK TO REPLACE/AUTO REPLACE gadget. Files copied from the Amiga need to be given a filetype through the options each time it is selected. An ASCII box provides a similar function to control the nature of the ASCII, Upper/lowercase 1, Upper/lowercase 2 and Uppercase/Graphics. Specific conversions are available for Paperclip, Speedscript and Pocketwriter word processor document files. Disk-2-disk cannot detect conversion errors so it is up to the user to get the setting right. It is fairly easy to tell if the setting is correct because there is a DISPLAY TEXT gadget which allows you to display the translated text in a window before attempting to copy the file. Basic files which have been listed to a sequential disk file can be copied from the C64 disk to the Amiga using the UC/lc ASCII conversion option.

The DELETE box will scratch the selected file from either the AmigaDos or C64 disk. Delete does not support wild-card file definitions. As C64 disk changes are not automatically detected it is necessary to click the DISK CHANGE box to make D2D recognise the insertion of a new disk in the 5.25-inch drive. One problem experienced by this utility is the difficulty in processing tracks one to seventeen on a C64 disk. Reading this area is slow and often unreliable but writing to it is virtually impossible. For this reason the FORMAT option creates C64 disks with the first seventeen tracks unformatted and marked as used in the Block Allocation Map. D2D provides two disk checking functions for 1541/1571 format disks. Clicking on the BAM CHECK box begins a process of scanning the directory of a C64 disk and comparing it against its BAM. A requestor reports any discrepancies. Selecting the READ CHECK box causes each sector on the disk to be read in turn. Errors, often caused by head alignment problems, are again reported by requestor. Disks formatted using D2D will usually fail this test on their first seventeen tracks.

'Specific conversions are available for Paperclip, Speedscript and Pocketwriter'

The Disk-2-Disk disk also includes three public domain programs which can be used to convert several types of Commodore 64 picture files to IFF format. CCS did not write these programs and therefore do not support them. They are provided 'as is', as a convenience to the user but with the proviso that CCS do not guarantee that they will do anything useful for you!

Disk-2-Disk, although by no means a panacea, could be a real benefit to anybody trying to move data from their old Commodore system. It is achieving something which has long been thought virtually impossible. While by no means infallible, it can achieve a respectable success rate as long as good quality disks are used and data is forced to reside away from those first few difficult tracks. The facility to migrate BASIC programs is potentially very useful. As far as it goes BASDIF is a great idea. Unfortunately it cannot translate between the two basic dialects or do full syntax checking. Perhaps I expect too much, but Central Software deserve a great deal of credit for getting it to work at all.

A.S.

Price: £29.95.
Contact: Burocare Computer Systems, 211 Kenton Road, Kenton, Harrow, Middlesex, HA3 0HD. 01 907 3636.

CATS-UK

At a press conference at the recent Commodore Computer Show, it was announced that Commodore were going to target the UK for its next big sales drive. Also mentioned were LARGE sums of money that are to be invested in the UK.

One area for which some of this money has been earmarked is that of technical support for both the developer and end user. Dr Rahman Haleem, Technical Support Manager for Commodore UK, explains what is being done to achieve those goals.

In an effort to improve the quality of software for the Amiga, Commodore UK are setting up a developers' support program to help existing developers and encourage new ones. The program provides, amongst other things, regular updates from Commodore, technical help through its large network of expert advisers worldwide and assistance with development equipment. A library of developments is being set up to help developers identify new areas and prevent duplication of efforts. This library opens up a window onto Europe and the USA through Commodore's internal network. Thus UK developers who contribute to it benefit through worldwide exposure of their products. Confidentiality, when applicable, is assured however and projects are only exposed at the developer's request.

Commodore Amiga Technical Support – UK (CATS-UK) will be organising meetings and seminars on a regular basis. An Amiga Developers Advisory Board (ADAB) has been set up to represent the interests of all Amiga developers and will meet regularly with Commodore.

Improved communications between developers for exchange of ideas, problem solving etc, has been given high priority. A decision is to be reached soon on recommending a computer network that suits the majority of developers.

So, if you are an Amiga developer and have not already registered with CATS-UK, or if you are considering developing for the Amiga, Commodore would like to hear from you. Write with details of your work or intentions to:

Dr Rahman Haleem
Technical Support Manager
Commodore Business Machines (UK)
The Switchback
Gardner Road
Maidenhead
Berkshire SL6 7XA.

GOLDSPELL II

John Walker checks out the latest stand-alone ~~speling~~ spelling checker from Gold Disk.

Who needs a stand-alone spell-checker? Users of the three most popular Amiga word-processors – WordPerfect, Scribble! and ProWrite 2.0 – will no doubt shake their heads. They have already got built-in dictionaries. Why should they want another? Gold Disk, the wizards of desktop publishing, are nevertheless hoping to put a spell on them and most of the other Amigans who process words.

GoldSpell II is a spell-checker that can be used with everything from Notepad to ProWrite, TextCraft, TextCraft Plus, Scribble!, WordPerfect and ASCII files. It is also compatible with Gold Disk's two desktop publishing programs, PageSetter and Professional Page. However, it cannot cope with WordPerfect files that contain headers and footers. When GoldSpell II finds them, it comes to a complete halt so that you have to reboot the computer.

GoldSpell II is up against tough opposition. It does offer some functions not found in other spell-checkers. However, in other respects it fails to measure up to the built-in facilities found in the big three of ProWrite, Scribble! and WordPerfect. Its biggest drawback is its speed. It is far slower than its rivals. I tested it and the others on a 4,000 word file that contained a spelling mistake in the last word.

Scribble!'s spell-checker took 55 seconds to check the document – a time which was cut to 29 seconds when its dictionary was first loaded into RAM. WordPerfect's checker took 22 seconds and only 18 seconds with its dictionary in RAM.

ProWrite 2.0 was even faster, taking 14 seconds using its main dictionary and 10 seconds using its smaller dictionary. When the main dictionary was loaded into RAM, it took 10 seconds to check the 4,000 words.

GoldSpell's dictionary runs from RAM and it cannot check a document held in memory, as the others can. You must first save your words, either to a disk or to the RAM disk, or use the program to check an existing file on disk.

GoldSpell took nearly twice as long as the slowest built-in spell-checker to read the document. Its time of 104 seconds was reduced to 53 seconds when the document was first loaded into the RAM disk but that is still less efficient than the others.

GoldSpell's dictionary contains 90,000 words, which is bigger than Scribble!'s, smaller than WordPerfect's and the same size as ProWrite's.

GoldSpell comes on a unprotected disk together with an informative 44-page manual. It will run on any 512K Amiga using Kickstart and Workbench 1.2 or higher.

One plus point is its batch mode, in which it will check a document without stopping, providing at the end a list of words are either misspelled or not found in its dictionary. This means that you can be working on one document while it spell-checks another. The list of unrecognised words can be saved to disk for checking at a later time. An inconvenience with the batch method is that the words are not shown in context but merely presented for correction one after the other.

When using GoldSpell in the normal way, the misspellings are shown within the actual document. About eight lines are displayed, enough to see each word in its proper context.

The program offers the usual alternatives for words not found in its dictionary. You can click on one of four alternatives when checking a word:

Accept ignores the word.

Accept and Remember will ignore further occurrences of it.

Guess Spelling will give possible alternatives to the word.

Scan Dictionary will offer a page of words that are close to it in alphabetical order.

If the word appears on either list, then clicking on it will substitute it in the document. Once you have finished checking a file you can save it to disk under its original name. The uncorrected version will be renamed with the suffix ".bak" at the same time. These, though, are standard spell-checking functions. What may make GoldSpell worth buying is its more original features.

You can create different user dictionaries of your own words. Even better, you can load not just one of these into memory as a supplement to the main dictionary but as many as your Amiga's memory will hold. This can be very useful when writing specialist reports.

GoldSpell's main dictionary is North American – that is, it accepts 'color' as a correct spelling but not 'colour', although it does recognise 'coloured'. You can overcome this problem by using its Exceptions list, in which you create a file listing the words you do not want it to recognise and its Substitute list, which will substitute one word for another.

You can also use the Substitute list to have GoldSpell automatically correct the spelling of words that you always get wrong. It provides a readability scale for your document, using the Gunning Fog Index which gives a value based on grade levels. (The FOG index of this review is 11.)

It can also analyse a document for the frequency of word usage, with an option for ignoring common words such as 'a' or 'the'. From this you can discover whether you are using some words too much. You can also use it as the basis for creating an index to a document.

Those users who already have a built-in spell-checker with their word processor will need to decide whether GoldSpell's extra facilities are worth the extra cost. Do you need batch checking, multiple user dictionaries and word frequency counts? These are the questions to ask.

GoldSpell II would be of greater benefit if it could check the spelling of words as they were typed – something no Amiga spell-checker can do, although it is a common enough feature on checkers used with other computers.

It would be helpful if it incorporated a thesaurus, which is a useful feature so far found only in WordPerfect. It also lacks WordPerfect's ability to spot the typing of double words, such as 'the the', which is something I constantly do.

For users of the word processor that is part of Gold Disk's PageSetter, or of its Professional Page desktop publishing program, GoldSpell is of immediate benefit since neither has a spell-checker.

Although words can be checked before loading them into either DTP program, changes are often made on the page so that a final check of the files with GoldSpell is an excellent safeguard against mistakes.

If you are using a word processor that lacks a dictionary, then GoldSpell II is a worthwhile investment. It is powerful and easy to use, if a little on the slow side.

J.W.

Price: £29.95

Contact: HB Marketing Ltd, Brooklyn House, 22 The Green, West Drayton, Middx UB7 7PQ. (0895) 444433.

AMIGA HARD DRIVES
Incredible Value
20MB £499.95
40MB £599.95
60MB £699.95

DIGIPRO

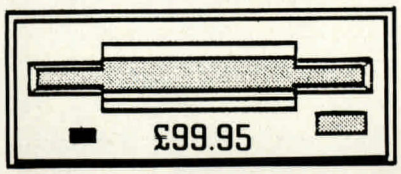
Commodore PCs

PC10 III	£859.00
PC20 III	£1259.00
PC40-20	£1959.00
PC40-40	£2549.00
PC60-40	£4949.00
PC60-80	£6249.00

Modulator £24.95

Printer Cables £7.99

3.5″ External Drives



AMIGA A2000
plus 1084
£1,399.00

AMIGA A500
NOW ONLY
£399.00

Sony Branded
3.5″ DS/DD disks
Box of 10 Inc. P&P
special
opening offer
£14.99

(0703)
703030

AMIGA A500 PLUS
Okimate 20
Colour Printer
Including FREE printer cable
ONLY £519.00

Wide range of Hardware and software products available. Call for prices TODAY or visit our new showroom after the 4th July

Unbranded Disks
3.5″ DS/DD
10 for only
£9.95
including free copy of VirusX
Price includes Postage & Packing

DIGIPRO LTD

Enterprise House, Howards Grove, Southampton SO1 5RP
Telephone 0703 703030

Locking Disk Boxes Holds 100 Disks £6.99

Okimate 20 Colour printer including free cable £139.99

KindWords Wordprocessor can include Graphics
Only **£49.00**

VISA

All Prices INCLUDE V.A.T.
Orders over £25.00 Postage and Packing FREE!
All other orders add £1.00 for Postage and Packing
For prices outside UK please telephone

Access

Heard it On the Grapevine . . .

Hearing whispers, Zack Skinner leads an intrepid AUI team on a quest for the 'Mega Game of 1988'. What they discover may not be just a load of Kristal balls.

For some time whispers have been going around that something special was being developed for the Amiga. A game that would jump the machine into the next stage of its career. No, it was not Interceptor. Everyone knew about that long ago. In Grapevine terms, Interceptor is old hat. This new one would, the rumours went, be the Mega Game of 1988. It was going to have the impact that Defender of the Crown made when it first hit the Amiga scene back in November 1986.

When the whispers crystalised , it was around a strange software company supposedly called Fish and Chips! Our credulity was certainly being stretched. With the aid of a few metaphorical bloodhounds, AUI set out to track down this mysterious fast food style "mega game" company. Was the whole thing going to turn out to be vapourware . . . a product of the vivid imagination of the computer business like a nightmare after a heavy late (fast food) dinner?

We found the answer in one of the less glamorous suburbs in North London, Muswell Hill, above a dry cleaners, at the top of some dark stairs . . . It was like the beginning of some computer adventure. "You have a quest . . . you climb the steps . . ."

We were admitted to a room crowded with computers and ancillary electronic equipment, mostly of the Amiga/ST variety. "Fish and Chips?" we asked hesitatingly. The admission was given almost grudgingly. It turns out that we got the pronunciation almost right but the spelling wrong. Fissionchip, which some might think a wittier and certainly more relevant title, is the correct name for the company that is creating the rumoured

musical, sorry, computer entertainment. The reason that the word 'musical' crept in was that Fissionchip's original concept for the "Mega Game" was not for the computer at all but for a stage musical. Their plans had advanced enough for them to get Patrick Moore, the well-known TV astronomer, and singing star Elaine Page involved. Both recorded voice and music parts. (No, Patrick Moore didn't sing.) And the first thing Fissionchip did was play AUI the actual digitised Patrick Moore voice that is to be introducing "The Kristal".

The Kristal? Yes that was the name of the show, once to be a musical, now gathering a cast of thousands, it seems, to help get it onto your Amiga screens.

At this point, it should be said that as at other magazines, AUI is often subjected to hype; the heightened, fever pitch of excitement that software houses or their PR people bring to bear to attract attention to their products which they believe, like fond mothers of unexceptional children, are not only beautiful and intelligent but possess an irresistible charm that will benefit the whole human race – and possibly even the aliens on distant planets . . . Too often, like those fond mothers, the software hypers are sadly mistaken. It turns out to be just another horizontal shoot 'em up . . .

So in our sceptical, journalistic way, we were on our guard. Interestingly, the eccentric Muswell Hill surroundings soon became less intriguing than what we saw on the monitors' screens. This was not another over-fond maternal illusion. It was clear we were being shown something that might possibly justify the rumours . . .

After the Moore sound we heard some music, composed by a certain Giulio Zicchi, whose name has appeared not a million miles from these very pages. It was strong, vibrant and memorable. The Fissionchip team claim they hum it all day . . . it wasn't Mozart but it was undeniably very good.

Then the graphics. Fissionchip say they are aiming to surpass Cinemaware –

KRISTAL

an ambitious objective. Once again they may not be vaulting too high. Without question, they have produced some of the most impressive looking backgrounds, action areas and character sprites that have yet been created for home screens. Even those they showed us on the ST were of high standard. When they brought the Amiga scenes out, we were even more sure that we were being shown something out of the ordinary. The graphics were not only colourful, highly detailed and excellently drawn, but the characters – we were told that there are to be at least 60 different ones all cunningly animated – looked hauntingly realistic. The animated movement was of the highest quality – all swirling cloaks, swinging arms and bouncing strides.

We saw, too, some spritely sword fighting – and that word spritely is meant to be taken in both senses. The slashes were swift and silky smooth and the fighter was well-defined and of a standard that will, at least, compare with any yet seen on an Amiga screen, imaginatively dressed and illustrated. If the sword play was good, how was the gameplay? Well, we can't tell you about that because we did not see any – for technical reasons . . .

"What kind of game is this anyway?" we asked.

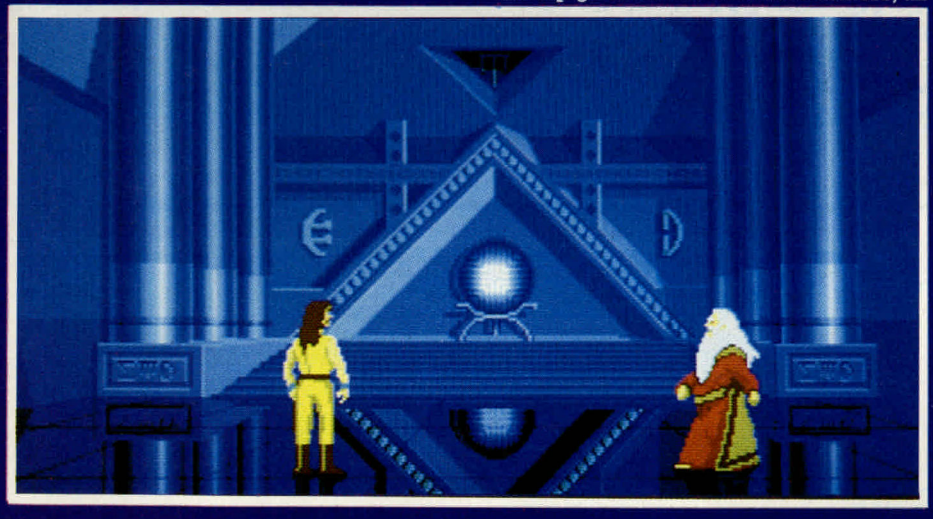
"It's everything," we were told.

"Yes, we know that. Everyone tells us that about their games. But what is it really?"

It seems that The Kristal is planned to be a massive roleplaying, strategic, arcade adventure, unlike anything ever done before – a new concept in computer games . . . Oh yeah?

Well, there will be a quest . . . to discover the truth behind the disappearance of the enchanting Kristal. You will travel mysterious planets, meet witty characters, gain information and clues from them either by talking (Fissionchip have created their own parser) or fighting (hence the swordplay) and finally reach your goal of retrieving the wonderful Kristal – you hope. Not too different from many scenarios that have come our way, but what we saw of the stuff they are putting into The Kristal may certainly bring it into another class altogether from those many great sounding but not so great playing games we have all mistakenly bought.

The people behind The Kristal – in spite of the unfortunately facetious company name – seem to know what they are doing. They have brought in some of the top games creators in the business, all sworn to silence, to help them bring about something that accords with their original Broadway musical dream. They have been signed up by one of the potentially strongest new names in the software business – Prism Leisure, who will bring out The Kristal under the well-known Addictive Games label. Epyx, one of the cream of US software houses, is apparently so delighted at being given the chance to release The Kristal in the US that it is already predicting that it will go to Number One there. In France, UBISOFT, the top software house, is doing the French version and Guillemot, the top distributor, is aching to get its hands on it. In Germany, too, there are secret Kristal fans waiting for the marks to pour in. Already, it seems, there is a worldwide quest for The Kristal . . .



Will it all be worth it? Will The Kristal be as great as it is dreamed? Well, you never know . . . What AUI saw, though it was still in rather a raw state, did make it look like Fissionchip could have created something; a whole package of impressive elements that if they are hung together as skilfully and excitingly as their appearance at this stage makes them seem, could just turn out to be that Amiga turn on, that smash hit that makes 1988 memorable – that Amiga-worthy Mega Game experience for which we have all been waiting. It might be worth your while to watch this space . . . We could all yet become ardent Kristal gazers. **(Kristal? Fissionchips? Mega Game '88? Muswell Hill? What have you been drinking? – Ed.)**

Z.M.S.

IZATION

FROST BYTE

Micro Value

Of the three games we have this month from Micro Value and Tynesoft, Frost Byte is both the cheapest and the most enjoyable. Frost Byte's origins stem from an old 8-bit title from Mikro-gen; not the ideal source for a new Amiga release, you might think (Mikro-gen have disappeared!), its origins certainly show through in the game, too.

Frost Byte brings you down to about the second or third rung on the evolutionary ladder, with you taking control of a small wormy creature. Instead of wriggling around, you walk by flipping end over end like a slinky. Your objective is to rescue five fellow kreezers from being eaten by a race of predictably moving sprites.

"Sweets can be found and eaten for differing effects. Red ones make you move faster, blue gives bigger jumps and green sweets allow you to fall further"

I might predict that Frost Byte will remain unique for you are unlikely to see another game like this on the Amiga, mainly because it uses such an old-fashioned design. The kreezers are trapped at the end of a series of screens of platforms which are patrolled by faces, birds, monks, eyeballs etc. Sweets can be found and eaten for differing effects. Red ones make you move faster, blue gives bigger jumps and green sweets allow you to fall further. This is clearly explained in the instructions which tell you "you cannot use a sweet until you have picked it up and used it". You would think that whoever writes these instructions could give the reader the benefit of having some intelligence, but probably Tynesoft have had the problem of those (like me!) who don't customarily read instructions or those who don't understand anything! (Not like you, I'm sure!)

Something strange that I cannot explain is that sometimes when I loaded the game, the only sound effects to be heard were my shots and explosions, other times there were a few more. Anyway, even with a full set of effects the Amiga's sound chip never gets out of first gear. The same can be said for the graphics, a lot of which seem to have been unnecessarily roughly shaded.

Dodging the baddies and jumping around the platforms would not be enough on its own, and the original main character is all that saves the game from total insignificance. It certainly gives the game enough attraction to keep you at it for a short while, with a mildly addictive feel as you try to get one screen further. This wore off after I finished the first level, maybe because the game has to be played in exactly the same way each time.

Frost Byte (nice name that!) unfortunately suffers from the "Jet Set Willy" syndrome, a bug of sorts which continually kills you if you re-enter a screen directly on top of an alien. Priced at £14.95, Frost Byte is not by any means expensive but another fiver could have been knocked off to come in line with Anco's and Mastertronic's ranges. This is really just another dated game design that just cannot do the Amiga justice. It does have its moments of enjoyment and those who never played the Mikro-gen gem might like it.

T.H.

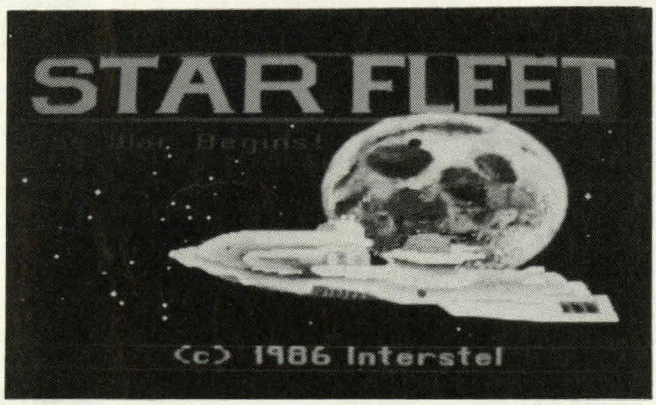
Graphics: 5
Sound: 4
Playability: 6
Value: 6
Price: £14.95

STAR FLEET 1

Electronic Arts

Star Trek type games have been around since before the Amiga was even thought of but it has taken until now for this simple idea to reach maturity. Available on some computers since 1985, Star Fleet 1 – the War Begins! will hardly stun you with its graphics but its sheer depth is uncannily compelling.

The game is all about tactical exploration of a vast galaxy, which is represented on small grid-reference charts which show your ship in relation to any other interesting items in that particular 10



by 10 quadrant grid. This is no arcade game but a test of leadership skill and decision-making; if you are to survive long as a Star Fleet officer your instincts had better be right first time. A wealth of data has to be assimilated as you plot your course, sending out probes, trying to take out enemy ships and locate star bases. Control is through both mouse and keyboard and there is so much to remember that things soon become hectic.

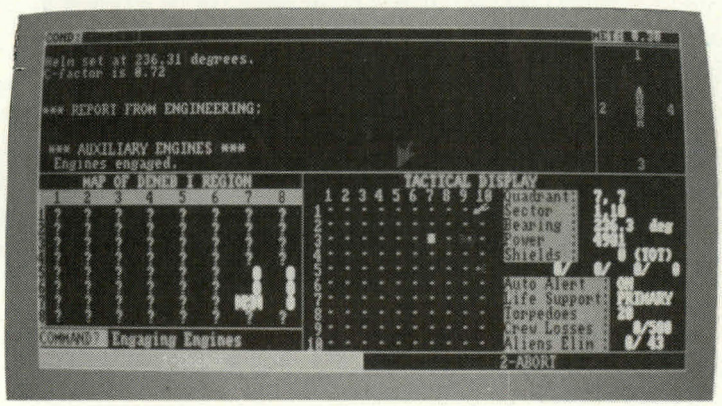
You begin the game as commander of an Alliance heavy cruiser, your duty to defend the area against enemy incursion; you are also on piece-rate, with a set number of deadly alien vessels to vapourise with your phasers or torpedoes. Sound familiar? Well, it's Star Trek, Jim – but not as we know it.

Obviously for copyright reasons there is not a whiff of anyone or anything remotely connected with the Enterprise or her crew but the language is all Trek-speak and familiarity with the T.V. show characters is a big help in making the fantasy adventure come alive.

As well as keeping your ship intact from the outside, you also have to contend with enemies aboard once you have been promoted from the easiest two levels of play. You only know when one has beamed on when he starts sabotaging your equipment. I have never seen a battle strategy/simulation the equal of this.

Although initially difficult to learn the scenarios are varied enough to prove compelling as you try and work your way up from the humble ranks of rookie to Admiral. There is also the chance to earn medals on the way to the top of the Star Fleet heap and your record is stored to disk to enable you to progress at your own pace.

The software is accompanied by a library of documentation which will close scrutiny before you boldly go where no Amiga pilot has ventured before: There is a 69 page training manual to wet your appetite before diving into the 100 pages of the Officer's Training manual, which is used in the game's protection (type in a word from a given line) and for good measure there is a small booklet with Amiga-specific info and something laughingly called a quick reference card – it has well over a hundred items on it! Amid this forest of paperwork, one stark omission is the lack of a function key strip – annoying as the keys form a vital part of the game control.



You should have got the picture now – Star Fleet I is more of a way of life than a game. Anyone who likes their recreation in 15 minute bursts will not even bother loading this one but people who revel in lengthy exercises in simulation can cancel all appointments for the next year and build up their ranking and expertise. That is not to say the simulation is lacking in excitement – it's just that it is more in the mind than on the screen. A great example of its type with a wealth of features hidden beneath a plain exterior: but do not part with your cash until you have seen it running and had a taste of gameplay. Meanwhile, beam me up Scotty, there are Krellans on the starboard bow . . . ***P.I.***

Price: £24.95

BYTEBACK

VISA

THE AMIGA SPECIALIST

Fast Return of Post Service!

NEW RELEASES	RRP	ONLY		RRP	ONLY
Carrier Command	£24.95	£16.95	Corruption	£24.95	£16.95
Stir Crazy	£19.95	£13.95	Elf	£19.95	£13.95
Black Lamp	£19.95	£13.95	Sentinel	£19.95	£13.95
Return to Genesis	£19.95	£13.95	Pandora	£19.95	£13.95
Football Manager 2	£19.95	£13.95	Enlightenment	£19.95	£13.95
Peter b'ley Football	£19.95	£13.95	Interceptor	£24.95	£16.95
Bad Cat	£24.95	£16.95	Capone	£24.95	£16.95
Three Stooges	£29.95	£20.95	Star Fleet I	£24.95	£17.50
Intellitype	£24.95	£17.50	Crystal Hammer	£19.95	£13.95
Final Mission	£19.95	£13.95	Sky Blaster	£19.95	£13.95
Emerald Mines	£19.95	£13.95	Jinks	£24.99	£16.95
Romantic Encounters	£24.95	£16.95	Pinball Wizard	£19.95	£13.95
Arcade Classics	£19.95	£13.95	Armageddon Man	£19.95	£13.95
Aaargh	£19.99	£13.95	Rockford	£19.95	£13.95
Leathemeck	£19.95	£13.95	Amegas	£14.95	£11.50
Sherlock	£24.95	£16.95	Garrison 2	£24.95	£16.95

GAMES	RRP	ONLY		RRP	ONLY
Arctic Fox	£19.95	£13.95	Art of Chess	£24.95	£16.95
Backlash	£19.95	£13.95	Barbarian	£24.95	£16.95
Battleships	£19.95	£13.95	BMX Simulator	£14.99	£10.45
Bubble Bobble	£19.95	£13.95	Chessmaster 2000	£24.95	£16.95
Crack	£19.95	£13.95	Destroyer	£24.99	£16.95
Dark Castle	£24.95	£16.95	Eagles Nest	£19.95	£13.95
Ferrari Formula One	£24.95	£16.95	Feud	£9.95	£6.95
Flight Simulator 2	£45.95	£32.50	Firepower	£24.95	£16.95
" Scenery 7 or 11	£24.95	£16.95	Formula 1 Grand prix	£19.95	£13.95
" European Scenery	£24.95	£16.95	Flintstones	£19.95	£13.95
Hunt for Red October	£24.99	£16.95	Hollywood Poker	£9.95	£6.95
Kikstart 2	£9.95	£6.95	Leaderboard	£24.95	£16.95
Return to Atlantis	£24.95	£16.95	Roadwars	£19.95	£13.95
Rolling Thunder	£24.95	£16.95	Seven Cities of Gold	£14.95	£11.50
Sidewinder	£9.95	£6.95	Silent Service	£24.95	£16.95
Star Wars	£24.95	£16.95	Stellar Conflict	£26.00	£19.00
Strike Force Harrier	£24.95	£16.95	Strip Poker II+	£14.95	£11.50
Terrorpods	£24.95	£16.95	Test Drive	£24.95	£16.95
Time Bandit	£19.95	£13.95	Vampires Empire	£19.95	£13.95
Wizball	£24.95	£16.95	Xenon	£19.95	£13.95

ADVENTURE/STRATEGY	RRP	ONLY		RRP	ONLY
Aegis Arazoks Tomb	£25.00	£18.50	Annals of Rome	£24.99	£16.95
Balance of Power	£29.95	£20.95	Bards Tale	£24.95	£16.95
Beyond Zork	£24.95	£16.95	Defender of Crown	£29.95	£20.95
Deja Vu	£29.95	£20.95	Faery Tale	£29.95	£20.95
Guild of Thieves	£24.95	£16.95	Hitchhikers Guide	£29.99	£20.99
Kings Quest 3 pack	£24.95	£16.95	King of Chicago	£29.95	£20.95
Pawn	£24.95	£16.95	SDI	£29.95	£20.95
Shadowgate	£24.95	£16.95	Uninvited	£29.95	£20.95

ART & MUSIC	RRP	ONLY		RRP	ONLY
Photon Paint	£69.95	£52.50	Pixmate	£49.95	£37.50
Pro Sound Designer	£79.95	£59.95	The Director	£59.95	£45.00
TV Text (PAL)	£69.95	£52.50	Aegis Draw Plus	£184.00	£138.00
Digiview 2 (PAL)	£185.00	£142.50	ADRUM	£39.95	£32.50
Digiview Adaptor	£22.95	£18.50	Digipaint (PAL)	£59.95	£42.50
Instant Music	£24.95	£18.50	Sculpt 3D (PAL)	£77.00	£59.00
Aegis Video Titler	£110.40	£79.00	Aegis Animat/Images	£103.50	£77.50
Aegis Videoscape 3D	£143.75	£107.50	Grabbit	£29.95	£23.50
Deluxe Paint 2	£69.95	£52.50	Deluxe Print	£24.95	£18.50
Deluxe Video	£119.00	£89.00	Aegis Sonix	£57.50	£45.00
Deluxe Music Con. Set	£69.95	£52.50	Aegis AudioMaster	£46.00	£34.50

UTILITIES & BUSINESS	RRP	ONLY		RRP	ONLY
Word Up	£59.95	£47.50	The Works	£149.95	£119.00
Publisher Plus	£99.95	£69.95	Marauder II	£39.95	£27.50
Scribble 2	£99.95	£75.00	Softwood Write File	£99.95	£72.50
Aegis Diga	£57.50	£42.50	City Desk	£114.95	£82.50
SuperBase Personal	£99.95	£69.95	Superbase Professional	£249.95	£179.95

LANGUAGES	RRP	ONLY		RRP	ONLY
AC Basic	£195.00	£145.00	MCC Macro Assembler	£69.95	£49.95
MCC Pascal	£89.95	£69.00	Lattice C)4.0)	£189.95	£129.00
Cambridge Lisp	£149.95	£112.50	Devpac Amiga	£49.95	£39.95

ACCESSORIES	ONLY		ONLY
Locking Disk Box (80)	£9.95	Furry Mouse Cover	£7.50
Locking Disk Box (40)	£7.95	Mouse Mat	£6.95
3.5" Disks DS/DD (×10)	£11.95	Keyboard cover	£5.95
Arcade Microswitch Joystick	£16.95	Quickshot Turbo	£12.95
Joystick/Mouse extension	£4.95	Quickshot II	£7.95
MEDIA BOX (holds 150 Disks!)	£19.95	Wiz Card controller	£3.95

The above is just a small selection of our VAST stock of 16 BIT software!
All prices include VAT and FIRST CLASS POST
All stock items are despatched by RETURN OF POST!

TELEPHONE (0636) 79097 for 24 Hour Credit Card Hotline!
or send Cheque/Postal Order/Credit Card details ... to:

BYTEBACK Dept. CCI. 6 Mumby Close
Newark. Notts. NG24 1JE

AMIGA 500

£339 + VAT (£388.85 INC)

AMIGA 500, MOUSE, 1 MB DISK DRIVE, DELUXE PAINT, WORKBENCH, TURORIAL AND TWO MANUALS

ALSO WITH 1084 MONITOR £509 + VAT

Hobbyte COMPUTING

INCORPORATING Bushyte BUSINESS COMPUTER SERVICES

PERSONAL CALLERS WELCOME AT OUR BRANCHES – PLEASE BRING A COPY OF THIS AD WITH YOU TO TAKE ADVANTAGE OF SPECIAL MAIL OFFER PRICES

1084 MONITOR
£199 + VAT
ALSO COMPATIBLE WITH PC/ATS
COMPLETE WITH AMIGA CABLE

SOFTWARE BARGAINS!!

CAMBS LISP	79.99	ANIMATE 3-D	94.99	PAGE FLIPPER	29.99
CITIDESK	79.99	ANIMATE STAND	34.99	PHOTON PAINT	79.99
INTROCAD	49.99	ANIMATE EFFECTS	34.99	SCULPT 3-D	59.99
LOGISTIX	79.99	ANIM. APPRENT	139.99	STUDIO MAGIC	65.99
TEXTCRAFT	39.99	AEGIS VIDEO TITLER	59.99	SAMPLER/MIDI	
THE WORKS	79.99	DELUXE PAINT	29.95	ALL GAMES SOFTWARE 15% OFF LIST.	
SHAKESPEARE	139.99	DELUXE PAINT II PAL	64.99	SOFTWARE PRICES INCLUDE VAT AND DELIVERY	
SUPERBASE PERS	79.99	DELUXE VIDEO	39.99		
VISAWRITE	79.99	EXPRESS PAINT	49.99		

ORDERING
Send cheque or Postal Order for total, plus £8 per hardware item (software carriage free) and VAT where appropriate, to: DEPT AAU, Hobbyte Computers Ltd, 10 Market Place, St Albans, Herts AL3 5DG TEL 0727 56005
If you have ACCESS or BARCLAYCARD, phone your order to our Sales Desk on 0727 56005

PRINTERS
COLOUR **PRICES ARE EX VAT**

CANON PJ 1080A COLOUR INK JET PRINTER	£399
OKIMATE 20 RIBBON COLOUR PRINTER	£169
XEROX 4020 HIGH QUALITY INK JET PRINTER	£1130
HP PAINT JET HIGH QUALITY INK JET PRINTER	£995
MATRIX	
CITIZEN 120D NLQ PRINTER	£139
STAR LG2410	£369
STAR NB 2410 24 PIN	£429

LOTS MORE, PHONE FOR PRICES AND SAMPLES

2nd 3.5" DRIVE FOR A500 £87
880K, HIGH QUALITY WITH 12 MONTH GUARANTEE
RENDALE GENLOCK A500/2000 £234
MICRON 2 MBYTE MEMORY £449

A500 PACK, 1084 MONITOR OR MONO MONITOR 120D PRINTER WITH NLQ, THE WORKS SOFTWARE PACKAGE, TRANSFORMER SOFTWARE
£599.00 MONO + VAT
£699.00 COLOUR + VAT

ALL PRICES EXCLUDE VAT EXCEPT SOFTWARE

CMB
PC1
IMB COMPATIBLE
OUTSTANDING VALUE
AT £349 + VAT

Chameleon ADAPTING TECHNOLOGY TO YOUR ENVIRONMENT

10 MARKET PLACE
ST ALBANS · HERTS · AL3 5DG
TEL: (0727) 41396/56005

1G THE ARNDALE CENTRE
LUTON · BEDS · LU1 2PG
TEL: (0582) 457195/411281

PRINTKIT IV

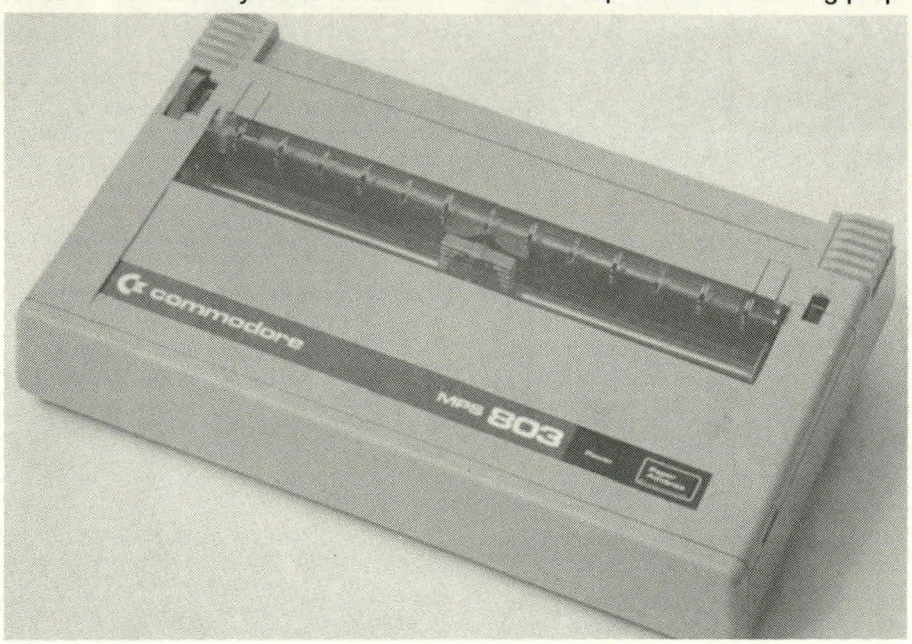
Armed with only a Printkit IV and a steady hand, Rico Gusman upgrades his 64's 803 printer to work with his new Amiga.

There is no doubt that many of those people lucky enough to own an Amiga will have upgraded from another machine. For many this jump will have been made from a Commodore 64. Unfortunately, the 64's peripherals such as printers, disk drives etc. are not compatible with the Amiga. These will probably end up being relegated to some dusty corner and replacement equipment will need to be purchased. This is fine for those with plenty of money to throw around but most of use have to scrimp and save up.

Now, however, thanks to Printkit IV from Avon Printer Technology,those of you with a redundant Commodore MPS 803 printer can give it a new lease of life. Not only will a Printkit IV allow you to use your old printer with an Amiga but it adds several enhanced features such as true descenders, bold, italic and single pass underlining. For those of you saying 'What about my trusty 64 that I still use from time to time' well Avon Printer Technology have also included a switch so that you can switch out the Amiga circuitry and restore the printer to 64 mode.

Printkit IV comprises of a 3.5 inch disk containing a new printer driver, a resistor, a small integrated circuit, socket, a large IC, two IC sockets, a small switch and a piece of solder mop. The tools needed to complete the job are a soldering iron and a couple of screwdrivers.

It is a relatively simple operation to add the new chips to the printer but I must point out that it is not a job for those who like to rush into things. It requires accurate soldering and a mistake here could damage the printer and stop it from functioning properly. The instructions come on 12 A5 pages (no heavy manuals to digest here) and are written in such a manner that a complete novice should be able to confidently tackle the job. What the manual lacks in looks it certainly makes up for in user-friendliness.



The actual conversion consists of stripping down the printer and removing the circuit board, inserting the components and then reassembling the printer. You will also need to type in a short program, included in the manual, for the printer driver to work.

I am not an experienced electronics wizard, yet I found that by just reading the manual carefully and applying a little common sense here and there that a satisfactory result could be easily obtained.

The lead to link your Amiga to the 803 can be purchased separately (although why you would buy the kit without it I don't know) and is as easy to fit. A 24 pin serial plug at one end attaches to the Amiga while a 6 pin DIN plug attaches to the 803.

Once you have installed the components and linked the machines together you are ready to start printing. How does it print? Well, everything is much faster than before and the quality of the text is far superior than in its standard mode. Different weights of text can be printed in one pass with all the descenders appearing as they should. Flicking the switch on the back of the printer (never with the power on though) reverts things back as if there was no kit fitted so that your C64, +4, etc can still run things.

An upgrade kit consisting of a lead, disk and an integrated circuit is available for those of you who have fitted the earlier 803/64 print kit.

This is a versatile piece of hardware and is a viable alternative to purchasing a new Amiga compatible printer. It has the added advantage of allowing the 803 to retain its 64 capability. So hurry up, dig out your old 803s and start printing out those AmigaBasic listings!

R.G.

Price £39.95 + £15.00 for lead

Contact: Avon Printer Technology, Swindon House, 4 Howard Road, Southville, Bristol BS3 1QH.

APL 68000

'A Programming Language' – originally designed for mainframes, is now available for the Amiga. Was the transition worth while? Bill Donald investigates.

Perhaps not every reader of ***AUI*** has heard of, let alone seen APL – short for A Programming Language. APL started life way back in 1962 with the publication of a book written by Dr Kenneth Iverson entitled *"A Programming Language"*. Iverson's book is one of those classical computer science books in the same genre as the Donald Knuth series which gave momentum to the new technology. I believe the book is long out of print but, if you live in the UK, your local library may be able to borrow a copy from the British Library. So what is APL, the language that gives you the freedom of FORTH with the modularity of PASCAL?

The previous sentence may seem a contradiction in terms but the focal point of APL was in its ability to handle complex data structures. Until the C programming language arrived on the scene, there was no comparable language with such an ability. APL permits the programmer to define and name a single component of data, a sequence of components or a matrix of data components.

"The language is firmly entrenched in the mainframe world and is used extensively by many industries"

This means that you can manipulate very large matrices in the same fashion that you would a single integer value. The beauty of this is that the processing overhead is not as great as you would imagine and coupled with a powerful linear addressed processor such as the 68000, the results can be very quick indeed. For example, you can go through a matrix successively selecting and adding corresponding components without the need for counts or loop control mechanisms. APL has such a wide range of sophisticated mathematical functions that you apply simple sorts as well as full-scale matrix inversions. The functions can be confined to a single line so that a sequence of functions can serve as the input data to the next function.

The language is very firmly entrenched in the mainframe world and is used extensively by many industries. A heavy user of APL are the international airlines with their complex flight booking and timetable requirements.

APL uses a range of symbols to represent each function which means that a standard character set is always used irrespective of the keyboard's national character set. In common with the FORTH programming language, programmers may define their own functions. However, unlike FORTH there are no reserved words in APL.

An APL program is actually a collection of programmer-defined functions. These functions can invoke each other and pass data but like PASCAL, each function is self-contained. The advantage with this strategy is that de-bugging is made very easy since each module can be thoroughly tested. It also means that a modular approach permits the flexibility of a *top-down* design to your code.

The APL language in this implementation is interpreted which gives instant feedback on your code. However, the slowness attributed to interpreted languages is easily offset by he conciseness of coding. A few lines of APL can perform an awful lot. This implementation of APL uses the concept of the *workspace*.

A *workspace* in basic terms is a collection of the data components and functions. There are various types of *workspace* within APL 68000:

AMFILE – Amiga DOS
TOOLS – Keyboard, mouse and multi-tasking
MENUS – Menu structures of Intuition
DIALOG – Requesters and alerts of Intuition
AMGRAPH – Low-level graphics (line and polygon draw)
WINDOWS – Screens and windows of Intuition
SOUND – Sound and speech
ARBIO – Untranslated (arbitrary) serial port I/O
DEMO – Demonstration programs

These allow access to the system software of the Amiga in much the same way that most other high-level languages permit. This range means that you can write code to have replication, ambivalent functions, error trapping all completely within the Intuition environment. The user need never know about the underlying system. Unfortunately, the DEMO *workspace* was locked and although I was able to view a certain amount of the source code, this was only achieved after some fiddling – not good, particularly for beginners.

"A single character can perform the tasks of several command strings"

One fundamental difference between APL and other programming languages for the Amiga is the character set. In APL, a single character can perform the tasks of several command strings. To avoid confusion between what constitutes a command and what is actually a character, APL uses a series of symbols. These symbols, which appear to be based upon Greek characters, determine the action of a line. MicroAPL Ltd provide a self-adhesive sheet of these characters which are designed to be placed on the side of the keycaps.

This implementation of APL also supports multi-tasking. Thus, you can initiate another APL workspace and use the clipboard device to transfer data between. A full screen editor is supplied which has its own window attached to the active window. Cut and paste are provided but, curiously, no search and replace facility. A VT100 terminal capability is also built in to allow interfacing to another system such as a mainframe running APL.

There is a wealth of high quality documentation provided – an APL 68000

continued on page 38

AN INVITATION TO JOIN THE BEST

You could be part of the team that creates the blockbusters.

You could be part of the program development force which has won commendations and acclaim from the computer industry.

Yours could be the name featured and revered as creator in the national reviews.

You could earn the respect and security that goes with being part of OCEAN –

The Brand Name in Entertainment Software

Make your mark NOW – If you're accomplished in coding for Z-80, 6502, 68000, or 8086 microprocessors, or have experience in the field of computer graphics/animation then write to us and we will quickly arrange an interview.

That's the invitation...

It's up to you to rise to the challenge ... and if you fit the bill – the rewards will speak for themselves.

ocean

Write at once in confidence to:
Gary Bracey
Software Development
Ocean Software Limited
6 Central Street
Manchester M2 5NS

LONDON'S LARGEST DISPLAY OF PRINTERS MONITORS COMPUTERS AND PERIPHERALS

HI VOLTAGE

The London AMIGA Centre

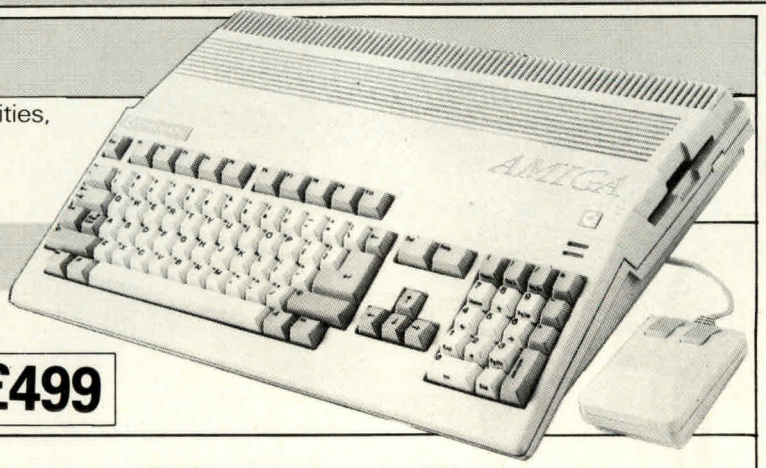
OPEN MONDAY-SATURDAY 9 AM-6 PM

OPEN MONDAY-SATURDAY 9 AM-6 PM

AMIGA A500

All Amiga A500's Include Work Bench, Basic, Utilities, Manuals, Tutorials, **Transformer.**

A500 £329



BUSINESS SYSTEM 500

Including Amiga A500, A1084 Colour Monitor, MPS1200 Printer, PC Emulator (transformer) and D Paint. The Works integrated package. Mono package available **£599**

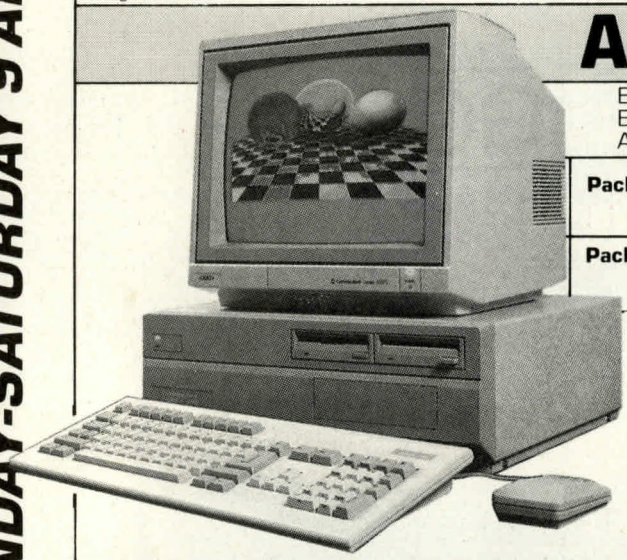
£679

A500 + COLOUR MONITOR **£499**

A500 Accessories

Amiga Printer Cable	**£12.50**	A501 512K Expansion	**£95**	Dust Cover	**£4.80**	TV Modulator	**£21**
Amiga 1084	**£179**	Cumana CAX354	**£85**	Philips 8833 Monitor	**£239**	10 x DS/DD	**£13.00**
5.25" Drive	**£145.00**						

AMIGA B2000



B2000 Includes Work Bench, Basic, Utilities, Manuals and Analyze 1 spreadsheet.

B2000 £995

Pack 1 B2000, Colour Monitor **£1174**	**Pack 2** B2000 A2010, Internal Drive, Colour Monitor **£1360**
Pack 3 B2000, Colour Monitor, XT Bridge Board, 30Mb hard disk. **£1868**	**Pack 4** As pack 3 and A2010 Drive. **£2017**

B2000 Accessories

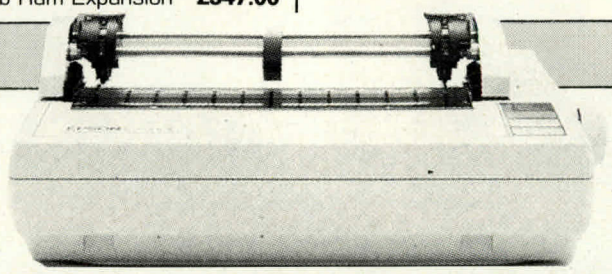
5.25" Drive	**£145.00**
Cumana CAX354	**£85.00**
Philips 8833 Monitor	**£239.00**
Amiga 1084 Monitor	**£199.00**
Fujitsu Multi-scan Monitor	**£379.00**
Taxan 770+ M/Sync Monitor	**£485.00**
A2010 Internal 3½" Drive	**£149.00**
A2052 2Mb Ram Expansion	**£347.00**
A2088 XT Bridge Board	**£435.00**
A2094 Amiga 20Mb Hard Disk	**£539.00**
30Mb MS DOS XT Hard Disk	**£259.00**
10 x DS/DD Disks	**£13.00**

SOFTWARE

Analyze 2	**£50**
Pro-write 2	**£73**
Deluxe Video 1.2	**£57**
Deluxe Paint II PAL	**£57**
Deluxe Music	**£57**
Shakespeare	**£125**
Zuma Fonts 1,2,3 each	**£26**

Over 100 Amiga titles off the shelf. We will match any UK dealers price for Amiga Software that is in stock.

PRINTERS



Panasonic 1081	**£141**
Star LC10	**£178**
Star NB-2410 24 pin	**£398**
Epson LX800	**£184**
Epson FX800	**£294**
Epson LQ500 24 pin	**£288**
Epson LQ850 24 pin	**£428**
NEC P2200 24 pin	**£278**
Colour Printers	
Oki Mate 20	**£115**
Xerox 4020	**£1129**
Epson EX800	**£419**
CBM MPS 1500c	**£249**

THE WORKS INTEGRATED PACKAGE

including Scribble II, Analyze II and Organize **£79**

Mail Order + Export Hot Line Phone 01-686 6362

Delivery by Securicor (4 day) please add £5.75 per item.
Delivery by Securicor 24 hour please add £9.95 per item.
(software postage free)

Send off or order by 'phone quoting your Access, Visa No. 'Phone 01-686 6362. Immediate despatch on receipt of order or cheque clearance. Or Telex your order on: 946240 Attn 19001335.

EXPORT CUSTOMERS SUPPLIED TAX FREE.
Contact our specialist export department on 01-686 6362

ALL PRICES EXCLUDE VAT.

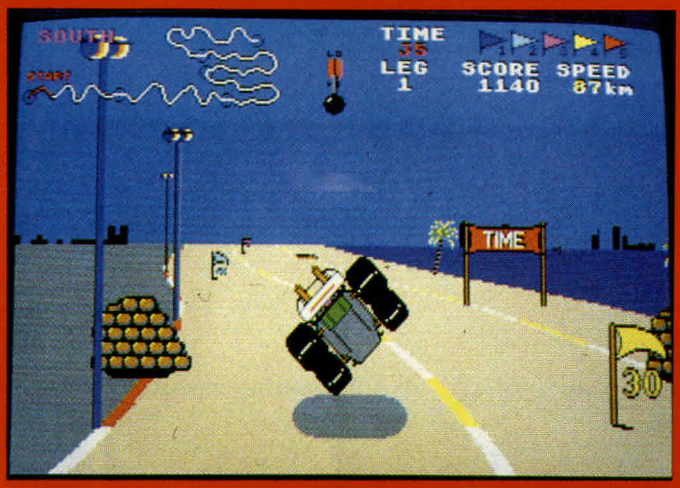
ALSO A VAST RANGE OF DISK DRIVES, JOYSTICKS, DISK BOXES, INTERFACES, SHEETFEEDERS, ETC.

HI VOLTAGE Dept. AUI, 53-59 High Street, Croydon, Surrey CRO 1QD. Fax: 01-681 8939. Tel: 01-681 302

Prices correct at copy date. Subject to change without notice due to currency fluctuations etc. E. & O.E.

BUGGY BOY

Elite



Better late than never . . . more and more software houses are breaking into the Amiga games market all the time, Elite being one of the latest. A colourful arcade machine is the source of their first Amiga release, Buggy Boy.

Five courses are there for the taking. Off-road is a race around five laps of a single track, while North, East, South and West each have five different stages between you and the finish line. Although there are no other cars to race against, the tracks are littered with rocks, gates and walls to be dodged, and flags and gates to be driven into for points and time.

Compared to 3D race games of the past, Buggy Boy is very ambitious. Not content witha stripey kerb and roadside scenery, it has loads of obstacles whizzing out from the horizon giving the screen a very busy look. Logs act as ramps, jumping the buggy into the air to clear fences and walls. Footballs can be bumped into the distance for more points.

Roadside signs warn of bridges which are easy enough at first but just add a few rocks on a single track road and things start hotting up. A solid looking bank crops up now and then to show off your buggy's tyre tread. Tunnels have been included which work very effectively, breaking up the more standard sections. A map is shown at the top of the screen, indicating your position, which looks nice but is very inaccurate.

Impressive sound is a quality rarely found in race games. The usual engine drone is there with a few jingly effects. Between games a tune more suited to a cockney pub knees-up makes itself heard. Some of the visual effects are excellent, such as the tumbling buggy and twisting tunnel sequence. In contrast, the explosion as you collide with a wall is pretty weedy.

It would be too much to expect Buggy Boy to come up to the standard of the coin-op in terms of speed, but a great job has been done. Control is responsive and everything moves fast enough to be convincing. I never found the coin-op particularly appealing next to the likes of Enduro Racer and Out Run, but in its Amiga format it makes a much stronger impression.

A few points that could have improved it are a satisfying completion sequence and a little tougher gameplay. Apart from that, Buggy Boy has been converted extremely well and will not disappoint fans of the original. Let's hope Elite can keep up the standard for future releases.

T.H.

Price: £24.99

Graphics: 9
Sound: 5
Playability: 8
Overall: 8

MPC SOFTWARE

Adventures

Adventure Constr. Set	£11
Bards Tale	£21
Beyond Zork	£19
Deja Vu	£22
Enlightenment	£16
Faery Tale Adventure	£20
Gnome Ranger	£16
Guild Of Thieves	£18
Jinxter	£19
Knight Orc	£10
Leather Goddesses of Phobos	£24
Romantic Encounters at the dome	£19
Shadowgate	£19
The Pawn	£19
Time & Magic	£16

Leisure Software

Annals of Rome	£19
Art of Chess	£19
Balance of Power	£23
Brian Clough's Football Fortunes	£20
Chessmaster 2000	£15
Cube Master	£20
Defender of the Crown	£22
Destroyer	£19
Ebonstar	£20
European Scenery Disc	£19
Ferrari Formula 1	£20
Flight Simulator II	£33
Flight Simulator II scenery disc 7 or 11	£19
Flintstones	£18
Gallileo 2	£50
Grid Iron	£20
Hollywood Strip Poker	£12
Hunt for Red October	£19
Interceptor	£24
Jet	£33
Kampfgruppe	£25
King of Chicago	£21
Mercenary Compendium	£19
Pink Panther	£16
Power Struggle	£12
Return to Atlantis	£17
Seven Cities of Gold	£11
Sinbad	£23
Star Fleet 1	£19

10 Unbranded 3.5" Discs	£10
In Storage Box	£12
10 Branded 3.5" DSDD Discs	£14

Business Software

Aegis Impact (Business Graphics)	£60
BBS PC (Set up your own BBS)	£75
Diga (Comms)	£60
Financial Cookbook (Home Accounts)	£25
Intellitype	£20
Intro CAD	£50
K-Spread 2	£70
Maxiplan 500	£90
Maxiplan +	£130
Professional Page	Phone
Ruby-View	£100
XCAD	£430

Databases

Acquisition	£270
Superbase Personal	£85
Superbase Professional	£260

Word Processing

Pro Write	£60
Pro Write 2	£85
Text Pro	£50
Txt Ed	£35
Word Perfect	£170
The Works	£115

Books

Advanced Amiga Basic	£17
Amiga Applications	£17
Amiga Basic Inside & Out	£17
Amiga for Beginners	£17
AmigaDos Manual	£23
Amiga Graphics, Sound & Telecom.	£17
Amiga Programmers Guide	£17
Amiga Programmers Handbook Vol 2	£24
Becoming an Amiga Artist	£19
Big Red Book of C	£8
C Programming Language (K&R)	£23
Flight Simulator Co-Pilot	£8
Hardware Reference Manual	£23
Inside Amiga Graphics	£16
Inside The Amiga with C	£19
Intuition Reference Manual	£23
Kickstart Guide	£12
New Hackers Handbook	£8
Programmers Guide to the Amiga	£24
ROM Kernal: Exec	£23
ROM Kernal: Libraries & Devices	£33
The Amiga Handbook (Precision)	£15
68000 Users Guide	£8

Phone for details of other books
Please phone for post rates for outside the UK

Arcade Games

Aaargh!	£16
Arkanoid	£17
Backlash	£16
Barbarian (psygnosis)	£15
Barbarian (palace)	£16
Black Shadow	£14
Bubble Bobble	£15
Crack	£15
Firepower	£16
Garrison (1 or 2)	£19
Gee Bee Air Rally	£16
Gold Runner	£19
Insanity Flight	£12
Kikstart 2	£8
Leatherneck	£16
Mach 3	£11
Marble Madness	£16
MindWalker	£40
Obliterator	£19
Roadwars	£15
Rolling Thunder	£18
Sky Fox	£10
Starglider	£18
Starwars	£16
Test Drive	£18
Winter Games	£10
Wizball	£16
Xenon	£16

New Products

Armageddon Man	£16
Bad Cat	£18
Black Lamp	£18
Buggy Boy	£16
Carrier Command	Phone
Deluxe Print 2	£40
Deluxe Productions	£140
Dungeon Master	Phone
Emerald Mine	£16
Fantavision	Phone
Football Manager 2	£16
Interceptor	£16
Kind Words	£49
Peter Beardsley Football	£16
Publishing Partner Professional	Phone
Sentinel	£16
Stir Crazy	£16
Three Stooges	£22
Vixen	£16
Western European Scenery Disc	£19
4-Player Adaptor	£6

Sound & Graphics

Aegis Animator + Images	£85
Aegis Audio Master	£40
Aegis Sonix	£50
Aegis Video Tiller	£60
Animate Apprentice	£140
Animate Junior	£50
Animate 3D	£100
Butcher 2 PAL Version	£23
Caligrapher (Colour Fonts)	£60
Deluxe Paint	£19
Deluxe Paint II PAL	£60
Deluxe Print	£18
Deluxe Productions	£140
Deluxe Music PAL	£50
Deluxe Video 1.2	£45
Deluxe Video 1.2 PAL	£60
Deluxe Print	£18
Digipaint	£55
Director	£40
Dynamic Drums	£45
Forms in Flight	£65
Grabbit	£25
Instant Music	£20
Kara Fonts	£40
Music Mouse	£35
Newsletter Fonts	£25
Photon Paint	£65
Pixmate	£40
Sculpt 3D	£75
Silver	£110
Soundscape Pro MIDI Studio	£145
Soundscape Utilities # 1	£30
Studio Fonts	£20
Synthia	£70
TX*Show	£60
TV*Text	£60
Videoscape 3D	£110
Deluxe Art & Music Discs	£8

Programming Languages & Utilities

Aztec C Developer Version	£250
CLimate	£32
DevPac 2	£45
FACC 2	£30
K-SEKA	£45
Lattice C V4.0	£150
Marauder 2 (Copier)	£30
Metacomco Macro Assembler	£50
Metacomco Pascal	£70
Metacomco Shell	£32
Metacomco Toolkit	£38
Project D	£30
Zing	£60

HARDWARE

Amiga A500	£399	20 Megabyte Hard Disc	£740
Cumana 3.5" Disc Drive	£110	Starboard 0MB	£320
Digi-View 2.0	£155	Starboard 512K	£360
Lockable 80 Disc Storage Box	£12	Starboard 1MB	£400
Jitter Rid	£16	Starboard Multi Function Module	£90
Citizen 120D Printer & Lead	£160	A1084 Colour Monitor	£270
NEC P2200 Printer	£399	A501 512K upgrade for A500	£110
AmigaPrinter Lead (State model)	£15	Linnet Modem & lead	£160
Xerox 4020 colour printer	£1300	Perfect Vision Video Digitizer	£180
Midi Interface	£50	Timesaver (A1000 only)	£60
A500/A1000/A2000 Genlok	£270	Perfect Sound	£70
A2000 Internal Disc Drive	£130	Pro Sound Designer	£70
Soundscape Sound Sampler	£90	Future Sound Sampler	£170
Starboard hard disc interface	£100	A2000 2MB RAM Board	£390

Special Offer

80 disc storage boxes, only £8

while stocks last only

Project D Disc Copier

The most versatile disc copier on the Amiga, Project D an copy not only the Amiga disc format but also ST (better than pro-copy), IBM and Xenix format discs
Only £30

Starboard 2 – probably the best memory upgrade for the Amiga series.

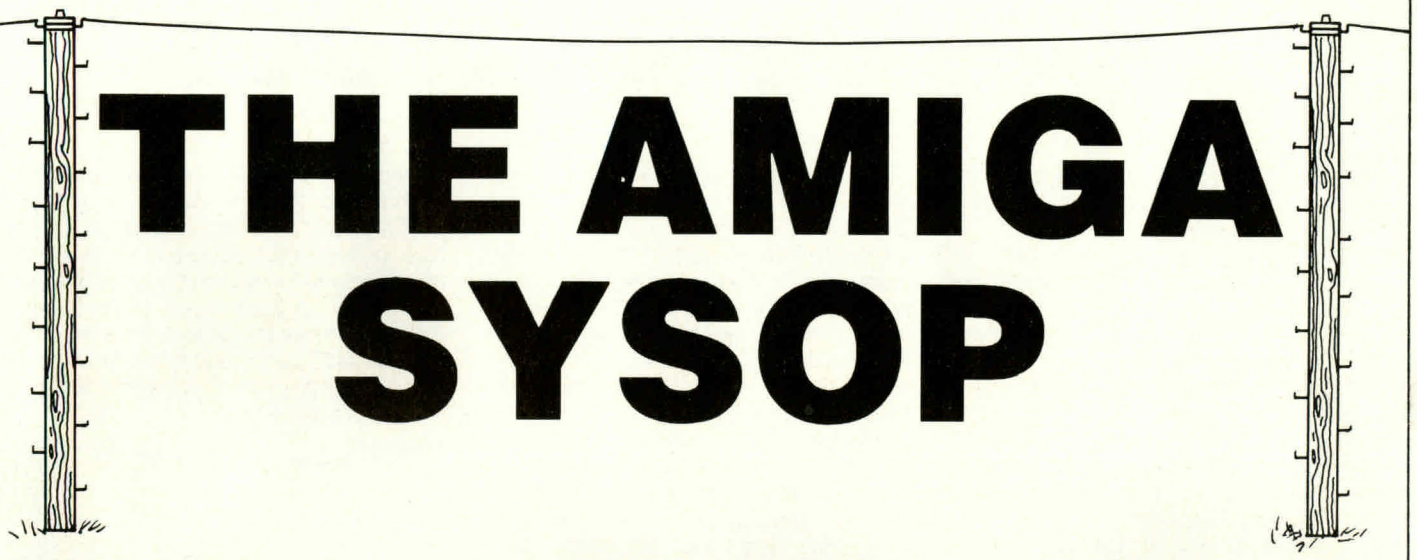
Why do we think the Starboard is the best memory board on the Amiga? Well, firstly you can use it on all 3 models of the Amiga. (There is an A500 and an A1000 version of the Starboard and you can get an A2000 adaptor for either version if you upgrade.) You can have versions with 0K, 512K, 1MB or 2MB RAM, and each version is upgradable so you can use your own RAM chips if you like. There is also the option to use a 68881 maths co-processor, parity checked RAM, 'Sticky' RAM-Disc and onboard clock and there is also a hard disc controller to fit inside the Starboard at only £100. You can also have up to 4 Starboards connected together to make up to 9MB Total RAM.
This is just a brief description of what the Starboard can do, phone or write for more details and pricing

All Prices include VAT & Delivery to UK

Mail Order Address

MPC Software

72 Julian Rd
West Bridgford
Nottingham NG2 5AN
Tel: (0602) 820106/455114



THE AMIGA SYSOP

Intrigued by the mysterious world of Bulletin boards? Wonder no longer – Stuart Williams explains all.

Communications enthusiasts who have gained experience in the use of modems to access systems on the other end of their telephone line, often ponder on the possibility of setting up their own system; after all, why spend money to call the world when, with the right knowledge and a little effort on your part, the world will call you?

In the world of communications, what often appears to be a simple task, i.e. the running of a Bulletin Board, can turn out to be a minefield of problems, as well as a source of enjoyment! There are many things you need to consider before taking on the responsibilities of becoming an Amiga Sysop (SYStem OPerator).

The first step is to decide what kind of system you can afford to run and it is essential to consider the hardware and software requirements you will need to provide a reliable service. To discover this, I logged on to some of the Amiga bulletin board systems (BBSs) and some of the 'general' boards.

Incidentally, although your main interest will undoubtedly be in the Amiga, there is no reason why you need to run your system on your favourite computer – if you have a suitable alternative micro, such as an IBM PC or clone, or even the venerable Tandy TRS80 Model 3 or 4 or an antiquated but reliable CP/M machine, then why not use this and save your Amiga for your other uses!

What is the recipe for success in setting up a BBS on your Amiga, then? First, take one Amiga – any model will do, with a minimum of 512K RAM, although those with memory expansion may find advantages to the availability of a large RAM disc.

Second, ensure that you have the necessary disk storage facilities to do the job properly! It is possible to run a small board on one drive but I do not recommend it, as you will soon run out of message areas and will have very little room for programs to be downloaded and uploaded by users! In any event, many of the popular software packages require at least twin drives. If you have more drives (the Amiga can use up to four including the internal unit) then so much the better but make sure they each have an independent power supply if you use more than two (one internal drive, one external), as some Amigas, particularly the A500, have limited capacity power supplies and four drives can be something of a strain! Such a multi-drive system can be quite adequate for a modest-sized BBS but ideally a hard disk of at least 20 megabytes capacity should be your eventual target. Not only will you vastily increase the capacity (and thus the possibilities) of your system but also the speed!

'The ubiquitous Hayes compatible modem, with auto-answer, is essential

Third, choose your software. There are a number of Public Domain or Shareware packages available for little cost, such as TagBBS (see Fish Disc 66, shareware). However, the most popular Amiga-based program appears to be BBS-PC, in the UK at least. Most good software suppliers should be able to get this for you; like most 'serious' Amiga software, it is not cheap, at £99.95 but it is a versatile and reliable system.

The software choice really dictates the modem system and since all the bulletin board software currently available is of American origin, the ubiquitous Hayes compatible modem, with auto-answer, is essential. Since it will also require speed buffering if you wish to allow users to access your BBS at the common UK speed of 1200/75 baud, this definitely leaves the 'cheap' manual modems out in the cold. Many systems use the popular and relatively inexpensive Miracle Technology WS4000 modem, though any of the new reasonable priced Hayes compatible devices should do the job. If you want to enable the modem to set itself to accommodate the speed used by the incoming caller, so be careful to check this before purchase.

It is possible to spend more than £500 on fast modems of up to 2400 baud full duplex but since most users will have 300 baud and/or 1200/75 baud systems, a modem with those speeds will be quite sufficient and it should be possible to purchase one for between £140 and £200.

One final expense (probably the most important!) is a telephone line. Few buding sysops are able to get along by sharing the voice line of the house – to do justice to the board, 24 hour access to its users is essential; what's more, strange warbling tones appearing on the 'phone in the middle' of the night are hardly likely to endear the other inhabitants of the house whether parents or wife, to you! Part-time systems are usually more trou-

cont. on next page

continued

THE AMIGA SYSOP

ble than they are worth, as you will inevitably find callers have your number but not the opeating hours!

Your local British Telecom 'phone sales department will be able to advise on the installation costs of a second line; it may even be possible to make a saving by having the line set up for incoming calls only. Thankfully, you will not need to acquire a telephone with it, thus reducing rental charges even further. Remember that unless you are in a particular noisy exchange area, you will not normally need to go to the extra expense of a special data line.

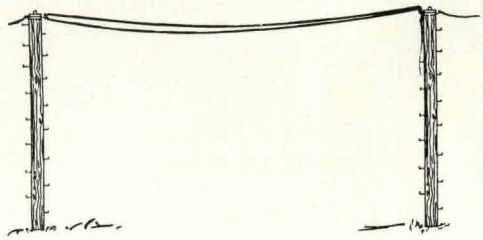
Once you have acquired the necessary gear (and recovered from the bill!) you are ready to design the layout and 'feel' of your bulletin board. If you have any particularly strong interests, such as programming, games etc, or even non-computing hobbies such as astronomy, music or photography, or science fiction/fantasy, you might wish to give the system a specialist theme that will attract users and keep them returning again and again; the Gnome at Home, for instance, (a Viewdata BBS, similar to Prestel) based in London, has a unique style according to its name!

The BBS system software will enable you to spilt your board into specialist messaging areas, on any subject you choose and will also enable an Email facility whereby private messages may be sent and received by users of the board. Naturally, the Sysop sees all and knows all, so it is your responsibility to see that nothing illegal is going on via your computer! Most message areas will be 'public', enabling anyone to read, comment on and reply to other messages. Private messages can also be left in these areas, where, like Email, they will be readable only by the person they were intended for and the Sysop.

If you have software availble for download, make sure it is only either Public Domain or written by yourself, as commercial software appearing as downloads without permission will land you in hot water! Speaking of software, if you have a lot of it available on the sytem, in addition to a good messaging area, you will attract two kinds of people; those who mainly use the message areas as a forum for chat and advice, who treat the board with respect and the download area as a bonus and the software hogs, who will attempt to log on for hours on end and 'rape' the download areas, blocking the system to legitimate users and never bothering to leave any messages. These latter types should not be encouraged, as they spoil things for everyone else – any BBS user will recall the frustration of waiting hours for the engaged tone to disappear.!

'It is your responsibility to see that nothing illegal is going on via your computer!'

I contacted several Sysops to see what their comments were on running a BBS. Clive Branson, co-/sysop of the TABBS system run for the Amiga User Group (Leicester 550893, 6pm-9am weekdays, 24 hours Sundays), was typical of the operators to whom I spoke. He said that they had few problems with the idiots and would-be 'hackers' that occasionally appear on the boards; he also found the software and hardware (BBS-PC), Amiga 1000 with 20 meg hard disc and WS3000 modem) generally reliable after minor teething troubles in the early days. His system has a public area but is mainly intended for AUG members, who have private areas and varied software available for download; access to these areas being included in the club's subscription. TABBS seems fairly typical of the Amiga BBSs but appears quieter than most to the non-AUGcaller, due to the limitations of the public area; AUG members will find a lot more of it!



So, then, to sum up, what do you need to do to become an Amiga Sysop? You have to be prepared to invest a fair amount of money in good, reliable equipment; you need also to invest a lot of time in looking after the system – although it will run itself much of the time, you will need to edit the message areas regularly, as well as taking on the responsibility of keeping an eye open for troublemakers. It's also handing if you have a store of good ideas to make the system interesting to the users and are prepared to keep in touch with them regularly via your system; the most popular boards are those with a friendly atmosphere!

I hope, I have not put you off running your own Bulletin Board with all this talk of money and responsibility – there is a great deal of pleasure to be gained from managing such a system, not least of which is the making of hundreds of new friends! Go to it and watch the world beat an electronic path to your door!

S.W.

APL 68000 *continued*

continued from page 32

Language Reference manual running to over 300 pages and an Amiga-specific manual containing over 60 pages. A quick-reference card and keycap stickers complete this professionally presented package.

My only real complaint about APL 68000 was the lack of meaningful example code. I would have liked to have seen more and to be locked out of the demo code was a serious error. A new user has enough problems coping with the new keyboard characters and it is always a good idea to make it possible to get something up and running fairly quickly. In addition to this, APL books are not exactly thick on the ground. The only one I was able to find was *APL is Easy!*, Turner J. R., ISBN 0-471-85882-X, Publisher – Wiley at $19.95. I would recommend that beginners obtain a copy of this book to assist in learning the language.

It may be a good idea if MicroAPL put out a demonstration disk at a nominal cost to show what APL 68000 looks like. I am quite certain that this would be of benefit in capturing potential sales in what is undoubtedly a fast and powerful language. APL is made even better in an Amiga environment. Another suggestion would be the inclusion of software to download the special APL characters to the printer. This would avoid the need to switch an ASCII printer into graphics mode in order to achieve hard copy of the special characters in APL program listings. MicroAPL could use EPSON as the model since this is likely to be the most common type of printer. Alternatively, provide the user with a design matrix of each APL character so that the user can produce their own download software. The documentation does make mention of using a daisywheel printer with a special APL daisy but this seems to be a sledgehammer-to-a-walnut approach.

B.D.

Price: £99.00
Contact: MicroAPL Ltd, Unit 1F, Tideway Industrial Estate, 87 Lirtling Street, London SW1 5BP.

More Amiga Answeres from Yuri Large, the Amiga User Group's Technical Whizz-Kid.

Dear AUI,
I only noticed your new magazine on the local newsagents shelves a couple of months ago. I have since been converted to it, from an American magazine. Your magazine is much more informative and relevant than your competitor and the Crib Cards are a boon for quick reference when I have a problem on my A500.

I have had my A500 for 6 months now and the time has come to expand its memory. I am unsure as to the best way in which to go about it. I have heard that the internal 1/2 Meg expansion moves the screen location and some programs will not run with it. However, I have not heard this said of the external memory expansions. Could you please explain if the external memory has the same problem and why the extra memory means some software will not work?
Yours sincerely,
Steve Sheldon.

Dear Steve,
Unfortunately the problem you have mentioned is common to all expansion memory on the Amiga. The 512K of memory supplied with the A500 is what is called "Chip RAM". This means that it is memory that can be accessed by the custom chips of the Amiga. Due to the original design of the Amiga only this 512K of memory can be used by them. The importance of this lies in the fact that the custom chips control the display. Therefore any image or picture to be displayed must be stored in Chip RAM. Some programs on the Amiga do not take account of this when using an Amiga with expanded memory, usually called "Fast RAM". This causes garbled screen displays at best but could result in the Amiga crashing. Most new software will take into account the amount of memory your Amiga has and therefore I would suggest that in time very little software will fall at this hurdel.

Some external memory units are supplied with a switch so as to allow you to turn off your extra memory when using a "problem" program. This is of course the ideal solution, the only drawback being that external memory expansions are usually more expensive. And thankyou for the compliments, we'll try to go on improving AUI.

Dear AUI,
I would like to congratulate you on your new magazine which is very interesting indeed. I find it most helpful being a new Amiga owner as up until now there were no magazines for Amiga Users and I had to rely on your sister magazine CCI.
My queries are as follows:-
1. As you very well know, there are lots of Modems about For people who have never used one it is very confusing.I need a modem for accessing Bulletin Boards and to be able to download PD and info, please would you advise me on the cheapest and best modem suited for my purpose.
2. Do you know of any way to be able to write "C" programs without the aid of a "C" compiler (through the Amiga itself)?
Yours faithfully,
S. Arillo.

Dear Mr Arillo,
1. In order to log on to most bulletin boards in the UK you will need a modem that supports both the V21 and V23 communications standards. This along with Hayes command set compatibility are the two major points to look for when selecting a modem. There are two for less than £200 that I can recommend from use. These are the Pace Linnet and the Miracom (formerly Miracle Technology) WS4000. One of these along with a lead and some comms software should put you squarely on the road.
2. In order to write C programs you need nothing more than a text editor. Unfortunately to run them you will need a C compiler to translate your text file into an executable file. There is however a C compiler now available (and working!) in the public domain.

Dear AUI,
As a 'piracy extension proxy' the Virus is a good benchmark: in Italy no Amiga user is immune. But here piracy is related to poor software distribution and no serious copyright law. Personnally, I purchase programs by mail – both in England and in the USA – but it is to be added that I can speak English AND I read foreign computer magazines AND I have a Master Card. Perhaps the average teenager is unlikely to meet the above conditions.

Along with the first virus (the one created by SCA), I experienced some problems with the Amiga (most remarkably, a lot of disks destroyed by the DOS itself).

I said the 'first' virus mainly because a few days ago, while using a disk editor to correct an error inside SSI's Kampfgruppe, I noticed that block 0000 showed the string 'Virus by Byte Bandits . . . 9/87 . . . number of copies:'

This new virus randomly stops the running program (the monitor turns black); it tries to copy itself onto EVERY disk inserted into the drive (write-protected disks too).

I thank you very much for your attention and look forward to news from you.
Yours truly,
Mauro Benedetti

Dear Mauro,
I am sure someone will soon be supporting the Amiga in Italy. At present all we can do is sympathise and publish your letter in the hope that an aspiring businessman answers your call. Though there is an official distributor of software in Italy who sells under the Commodore name. Anyway, I do have some more news on the Byte Bandit virus; as with the SCA virus there is a backdoor. When the Amiga freezes up just try this; press and hold down each of the following keys in this order:

Left-Alt, Left-Amiga, Space, Right-Amiga, Left-Amiga.

The Amiga should, after a few seconds, miraculously recover, at which point you can save whatever you may have been working on. Then turn off the machine and follow the procedure described in last month's Amiga Answers. For more details see the Virus article elsewhere in the magazine.

Dear AUI,
I was about to invest in the new Word Processor/Database program Write and File from Softwood when I read your article in Test Drive of your March 88 issue.

By all accounts it is a marvellous program and very flexible to use. You indicate that there is a catch if you only have an A500 as I have. Do you have to have 1 Meg or more to run this program? Can I run it on my 512k, even if I accept some limitations? Or is it just not worth it?

What would you recommend as the best way to expand the memory of my machine? So far as I can see I can either spend about £113 on an internal 512k RAM card or pay about £130 on a 1 Meg Cumana drive. As the program comes with two disks would it be right in thinking an extra drive with memory would be best for this application?

A word of warning if I may. When I ordered my printer I asked the shop concerned for a 24 pin printer driver.

They sent me a Workbench for an A2000 which, when I checked it with a Virus Killer, had the Byte Bandit virus embedded in the first line of the Boot track.
Yours faithfully,
A.P.A. Arengo-Jones.

Dear Mr. Arengo-Jones,
Softwood's Write and File requires 1Mb of memory to run therefore the most essential add-on will be the extra half Mb to take your Amiga's memory up to 1 Mb. But as you will probably know from the way your shoulder aches after a computing session, a second drive is a good idea as well. Even with 1 Mb of memory Write and File is a bit tight for room. You will find that to print in graphics mode you will need to reduce the amount of memory given to the screen display in order that if will not crash. This is one of the options on Write and File's preferences menu.

Your warning is a good one. I can tell you from my experience of running a PD library that these problems are almost inevitable. It seems that no matter how many disks you clean, within a week you are bound to have the virus back again. Of course most shops will make every effort to stop the spread of the virus, as it ruins a lot of stock. A few infected disks are always going to slip through but please don't blame us in the industry too much!

Dear AUI,
Can anyone out there help me? I'm looking for a 24 pin dot matrix pritner which is fully compatible with the A500 – at around £500 – and must obviously include printer driver(s). I've noticed a few mentioned in various ads but I would prefer one which could be recommended by actual users! Also I'm looking for a complete video digitizing package consisting of: Digitizer, Frame Grabber and Genlock. Is there such a package on the market – but not prohibitively expensive? I'v seen ads for all three as separate packages – surely someone must produce one?? Any help would be appreciated.

Keep up the high standard AUI – the price of the mag seems justified – it's no comic!
Cheers,
Mr. V. Szarmach,

Dear Mr. V. Szarmach
Most 24-pin dot matrix printers currently on the market are compatible with the Epson LQ range. This is good news for all Amiga users as there is a new Epson LQ driver on the Workbench 1.3, which should be released very shortly. Therefore most of these printers will work beautifully with an Amiga. Of the current crop of 24-pinners available I would recommend one of these three: Epson LQ500, NEC P2200 or Star LC24-10. If you are desperate for the 1.3 printer drivers for your newly bought 24 pin, I would suggest that you invest in one of the packages that already include them. The cheapest on the market is, I believe, Kind Words. Then you can copy them over to your normal workbench disk (a backup, of course) use this command, after booting up with the Kind Words disk and putting your workbench in the second drive:
copy devs: to df1:devs all <RETURN>

The package you suggest sounds great. However, the three abilities you mention are perhaps not as closely related as you might think. Each of these facilities requires its own circuitry and software. Due to this there is at present no product such as you mention, as it would in my opinion be "probhitively expensive".

Dear AUI,
This is a reply to the enquiry by Paul Andreas Overaa with regard to running an Amiga 2000 without the fan connected. After some research into the problem, checking current drain and the temperature of the power supply etc., I would say that a B2000 with a second 3.5 inch drive will come to absolutely no harm whatsoever from this modification. This is by no means the limit to which the power supply could be operated without cooling but when used within these limits there is a large degree of safety involved.

The only reservation that I have when performing this opration is with regard to the invalidation of guarantee or service contract. Personally I think that the peace and quiet is worth it.

Finally, for your peace of mind I am a fully qualified electronics engineer with a great deal of experience in the field of computing. Combine this with the fact that I am also 'broke' and you have a very thorough person when it comes to working on his own expensive (impossible to replace because I've got no money) equipment.
Yours faithfully,
Barry Swanborough.

Deary Barry,
Thanks for your research on this matter. I know for a fact that a lot of 2000 owners will be keen to do this, as apart from being noisy the fan also drags a lot of dust and dirt into the disk drives causing unneeded wear and tear. However, when doing this please take heed of Barry's warning that this action will void your warranty. If you do try this modification make sure you keep a watch on the power supply unit to make sure it does not get too hot, as 2000 PSUs cost over £150 to replace.

Dear AUI,
I am living in West Germany and will return to live in England in the future but I wish to buy an Amiga 2000. One of the facilities that I would wnat to use quite extensively on the computer is the graphics and sound, especially in combination with my video camera 'Sony Pro' which I bought here in Germany. This leads me to ask the following questions which I hope you can answer:
1. If I buy my Amiga from Britain would there be any interface problems with my video camera?
2. If I buy the Amiga box from Britain and the monitor from Germany would this work?
3. If I buy my Amiga in Germany will I be able to use it in Britain without any problems?
Yours sincerely,
Thakorbhai K. Patel.

Dear Thakorbhai,
Luckily enough for you, you should have no problems with any of your machines. The German mains supply is very similar to that of the U.K. so no problems there. With regards to your video equipment, this is all covered by the European video standard which is called PAL. Therefore your monitor and camera should work with TVs and videos in both the UK and Germany.

Dear AUI,
Thanks for some good information about the AMIGA 2000. In the issue of AUI February 1988 page 50 you say that both the parallel and serial port of the Amiga 2000 are IBM-compatible. To install the printer port for use with the XT bridgeboard, you can add the command LPT1 in the startup-sequence but what about the serial port? My trader cannot explain to me how I can install it. The program PCTOOLS on the IBM says: NO serial port! Can you help me?
Yours faithfully,
Gerd Bleckwedel.

Dear Gerd,
Sorry but I can't help. There is no way to install the Amiga 2000's serial port for use with the XT bridgeboard. As you say, the program LPT1 in the PC drawer on the 2000 workbench will allow use of the Amiga's parallel port from the bridgeboard. The only way to get a serial port for use with the bridgeboard is to buy a card for the PC which provides one and fit it into one of the PC-type slots on the 2000's motherboard. Please bear in mind when doing this that the system resrves COM2: for itself and therefore your card must be configured to act as COM1:. Fortunately these cards are not expensive and you should be able to acquire one for far less than £100.

When referring to the fact that the A2000's and the A500's serial and parallel ports are IBM compatible the reviewer meant that they were configured identically to an IBM PC's ports, unlike the A1000 which has non-standard parallel and serial ports.

GET YOUR KICKS ON SIXTEEN BITS

Have you got what it takes

ROLLING THUNDER

undercover cop?

JINKS™

A COMPLETELY NEW ANGLE IN COMPUTER FUN

Got an Amiga??? Then you'd be crazy to miss out on the latest great releases from U.S. Gold – all designed to make the most of the superior graphics and enhanced gameplay which your Amiga offers. *Get your Kicks today!*

Screenshots taken from various 16 bit versions.

All titles £24.99 each

U.S. GOLD REFRESHES THE AMIGA BITS OTHERS CANNOT REACH!

U.S. Gold Ltd., Units 2/3 Holford Way, Holford, Birmingham B6 7AX. Tel: 021 356 3388

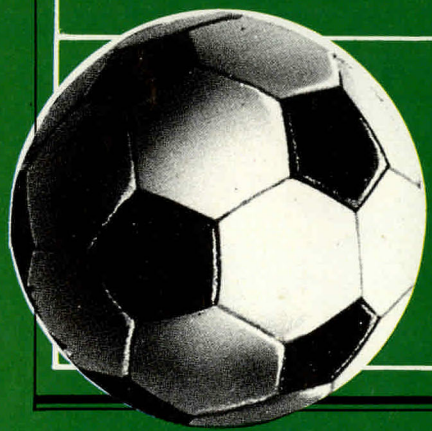
PETER BE
INTERN
FOOT

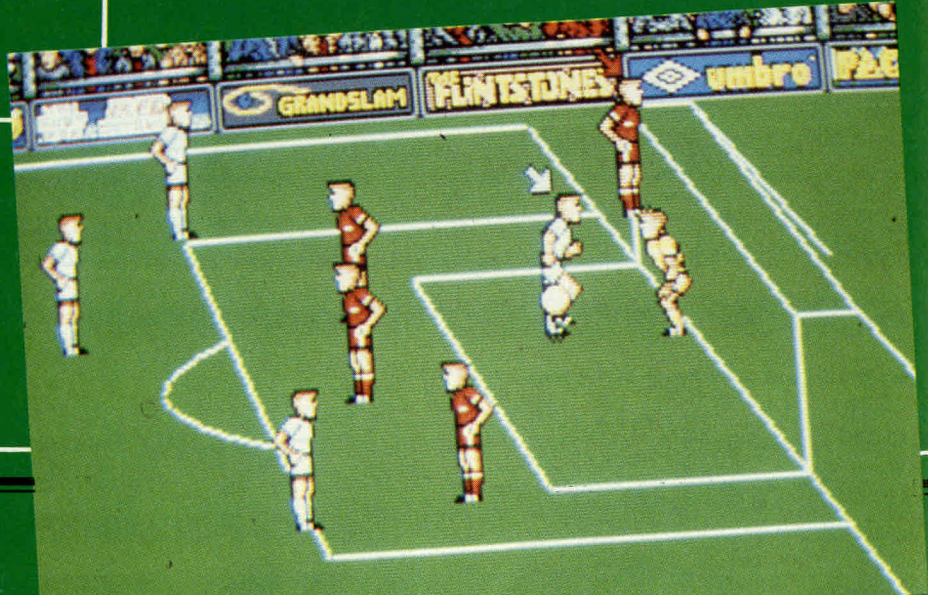
Feeling pretty annoyed with England's absolute trouncing in the European Championship? Grandslam's kickabout gives you the chance to replay the whole competition, and with any luck you might even win a few games this time.

One or two players can take part in the competition and can choose to play for any country in Europe. Two groups are then generated by the computer, through which you play to the semi-finals and the finals. This means that two players cannot just play each other straight away, only when they happen to meet in the competition. The simple addition of a two player practice mode could well have improved the situation.

During the game, the player nearest the ball is controlled, indicated by an arrow above his head. Both players have a "kick-o-meter" which is controlled with the fire button; the longer you hold the button the harder you kick the ball. Unfortunately, to give the ball a decent whack you need to hold the button for ages, by which time you may have been tackled. Even when you do get a good swing at it, it may hit another player if there is one coming in to tackle.

The screen is amusingly always packed full of Peter Beardsley look-alikes who all want a bit of the action. This means calculated runs and passes are





ARDSLEY'S ATIONAL BALL

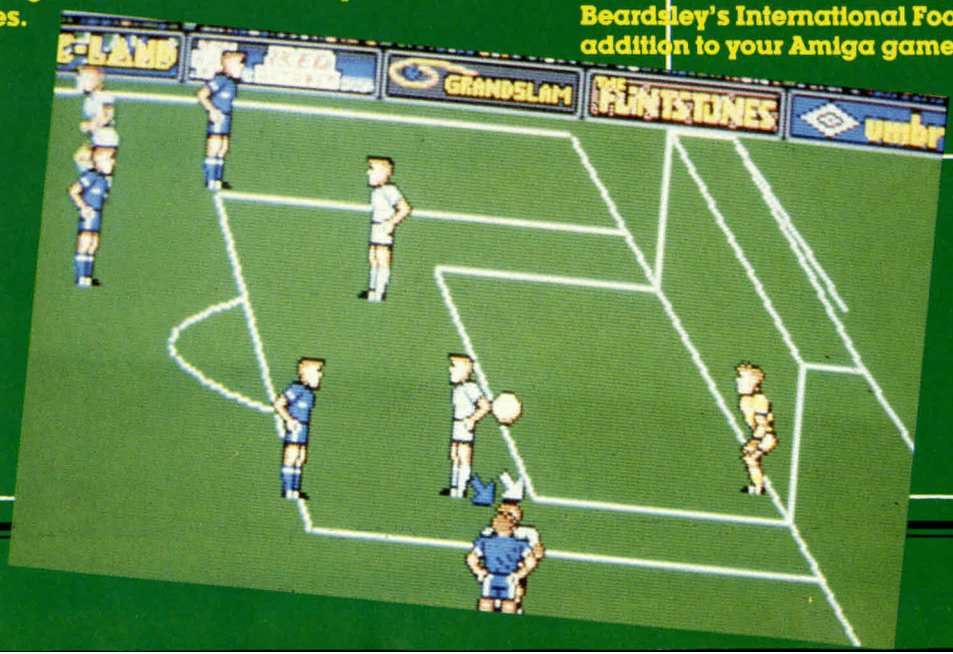
Grandslam

difficult to achieve; the game often becomes a real scrambling match with excitment piled on as a bundle of players chase an unpredictable ball.

Some of the graphics are very good and the size of the sprites makes this a true Amiga level performance. Place kicks are signified by a sampled whistle and an inset of the referee. Similarly when a goal is scored, a cheer of the crowd is accompanied by close-up of the commentator. "P.B.'s" graphics could benefit from greater emphasis on smoother animation and a properly constructed goal instead of the old style wire frame it possesses.

An interesting quirk can be witnessed in the goal area when an attacking player suddenly decides he wants to be a defender, and wallops the ball back up his end! Stress on the star players from their bank managers? Some extra features such as tackles, headers, fouls or penalties would have spiced it up a bit, drawing it away from the graphically enhanced 8-bit game that it seems to be. Nevertheless it is the only football game on the Amiga, and if you have the urge to emulate Eurochamps Wonderful Holland, with plenty of excitement if not as much skill, then Peter Beardsley's International Football will be a welcome addition to your Amiga games team.

B.V.



Graphics: 8
Sound: 7
Playability: 6
Value: 7
Price: £19.95

3½

Lifetime Guaranteed, double sided, double density, 135 TPI, bulk wrapped discs with labels

Quantity	Price
10	£9.25
20	£18.00
25	£22.99
50	£45.00
105	£89.99

5¼

Lifetime Guaranteed, double sided, double density, 48 TPI, bulk wrapped discs with labels

Quantity	Price
10	£3.50
20	£6.50
25	£7.99
50	£15.50
105	£31.00

NEW BULK DISC PACKAGE DEALS!

3.5″ Disc	Price	5.25″	Price
40 discs + 40 cap. box	£39.99	50 discs + 50 cap. box	£17.99
80 discs + 80 cap. box	£74.99	100 discs + 100 cap. box	£34.99
120 discs + 120 cap. box	£114.99	140 discs + 140 cap. box	£45.99

LOCKABLE DISC STORAGE BOXES

3.5″		5.25″	
40 Capacity	£5.49	50 Capacity	£5.49
80 Capacity	£7.49	100 Capacity	£7.49
120 Capacity	£9.99	140 Capacity	£9.49

Plastic Storage Box — holds 10 (State 3.5″ or 5.25″ 75p

AT LEAST 30% OFF ALL 16 BIT SOFTWARE

BRANDED DISCS; SONY, TDK, VERBATIM, DYSAN 3.5″ DISKS
FULLY GUARANTEED MEDIA – BEST PRICES IN UK

ALL PRINTERS NOW WITH FREE BOX OF PAPER

HARDWARE
AT LEAST 10% OFF ALL HARDWARE

Amiga A500 with Software, 10 discs + mousemat	£369.99
Atari 520 STFM Summer pack + 10 + mousemat	£369.99
Citizen 120D NLQ Printer with parallel I/F	£149.99
with switch	£109.99

★ All computers now with Virus Killer Disc ★

P&P Free on all orders over £15, under £15 add 75p P&P (UK Only)
Overseas Disc Orders Add £3 P&P. All prices include VAT

NEW ADDRESS

Cestrian Software

NEW TEL NO:

52 BROOK STREET,
CHESTER CH1 3DN
0244 312666

UNBEATABLE PRICES

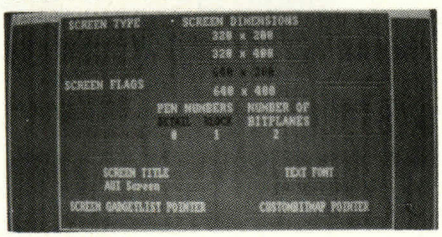
POWER WINDOWS 2

Programming the Amiga can be confusing and tedious. Giulio Zicchi examines the latest version of this labour saving program and awards it top marks.

As sales of the Amiga steadily improve, it follows that an increasing number of people will want to program the machine themselves. The logical route to take is the road that leads to INTUITION, the multi-windowing environment that makes the Amiga such a pleasure to use.

From the programmers' point of view, Intuition is one of the system libraries comprising a collection of "C" language functions held in the Kickstart ROM and provides a relatively easy way of accessing the powerful graphics and sound facilities of the machine.

In many cases these functions require a number of parameters to be passed to them in order to set things up correctly. For instance, to open up a new screen no fewer than thirteen variables have to be passed to the system. Arranged as a structure of varying data types, these variables control such things as the screen dimensions and resolution, colours to use for the screen gadgets, a pointer to text for the screen title etc.



Each window that opens in a screen, each menu attached to a window and each item attached to a menu has its own structure containing variables which control its characteristics. Therefore a lot of programming time and indeed debugging time, is taken up with the correct typing in and checking of these variables.

Wouldn't it be nice, then, to use a utiliity that allows you to create the screens, windows and menus that you need with a few simple clicks of the mouse button and let the utility create the source code. Enter Inovatronics and Power Windows 2.0. When I first received this program for review I was immediately impressed. Having used it for a couple of weeks now I am even more impressed. I would even go as far as to say that this is easily the best programmers' aid for the Amiga that I have seen. Basicaly, Power Windows lets you see how your application will look as well as creating the source code for the relevant data structures in 68000 assembly language, "C" or Modula 2.

On booting PW2 you are presented with a variety of options, several of which are ghosted to prevent their selection at this point, since it is impossible to have a menu or gadgets before you define your window. Starting with the screen options, selecting "define screen type" will present you with a window containing the various screen attributes which you may now select to define your screen. The screen type, resolution, text, flags and bitmap pointer may all be chosen at this point and with a simple click of the OK gadget . . . Hey Presto! Your new screen will appear. Once your screen actually exists, the "screen palette" option may be chosen so that you can define the colours that will be used by your new screen.

From here, the window menu options may be chosen and from this menu alone there is a wide range of choices which will fully control the appearance of your chosen windows. Particularly useful is the "grab window" option which will tell you the names of all the current windows that exist and allow you to import that window and its' characteristics and use them in your own program. All of the window flags, minimum and maximum window sizes, title bar text and IDCMP flags are set up easily with the mouse and exiting this option will cause Power Windows to show you your new screen and your new window exactly as they will appear.

At any stage, you may save the current state of your work to disk and use this as the basis for a potentially larger project in the future; after all why start from the beginning every time?

Programming via the Intuition library became confusing, even tedious, when setting up the relevant menu structures and linking them together. Power Windows has make that a thing of the past.

From the "menu" menu (!) you are able to edit the menus that will appear on the menu bar at the top of your screen and having done this you can then work on the items and subitems pertaining to those menus. The range of choices given here is vast, with options to let Power Windows format things automatically or leave it to the user; menu flags, text, drawing modes, hitbox sizes and dimensions are all selected from this menu. Sounds comprehensive doesn't it? It is — and there is more ito come.

Gadgets are the workhorses of Intuition and their implementation within Power Windows is complete. Whether you require string, boolean or integer gadgets your needs are catered for. Needless to say, it is possible to select any combination of gadget flags, choose where in your

continued on page 48

Rotech

Gismoz

Voted Utility Program of the year 1987 (USA). Indisposable package (19 desktop accessories) Excellent selection of programming and business tools (21). Icon Maker / Graphic Package / Memopad / Calculators / Black Book etc.

£24.95

Promise

95000 word dictionary, 18 words per second spelling checker speed, features spell help. Operates with virtually any word processor. Will even check punctuation errors. Creates customised dictionary.

£24.95

Magnum Turbo

Loads program up to 3-5 times faster. Build into commercial / own programs, they will automatically run faster.

£24.95

Arcade Classics

(3 games)

Brands Hatch - car racing game
Bouncer - Arkanoid clone
Swooper - Arcade shoot 'em up
Brilliant sound, graphics and game play.

£19.95

Easy Write

Easy to use Word Processor, fast and powerful, multiple font features, professional quality, ideal for home use.

£24.95

Ultimate Sound Tracker

The ultimate music package, used by professional programmers for sound tracks from top games. Stereo output, already includes 127 different samples, create your own samples, save songs to disk and add instruments to songs on disk. Edits very long songs, without taking up much memory.

£49.95

Omega File

Professional Database and Mailmerge. 200 Characters per field, 256 records, 5000 characters per record. Full screen editing. Up to 32000 indexed records per database. User friendly, opens 2 databases at same time.

£24.95

Drum Studio

Turns your Amiga into professional drum track. Included 20 digitised instruments. 10 songs available with 100 pattern calls. 5000 different sounds at the same time. Screen graphics for visible control adjustments

£24.95

Hercules Copy

Without doubt one of the most powerful backup programs available. Copies commercial software. Special parameter menu. Supports 4 drives and memory expansion. Mouse and keyboard support. Easy to use, absolutely indispensible.

£24.95

Football 1st Division

Now's your chance to manage a first division soccer team and find outwhat it's like to achieve your ultimate ambition - to lead your team to the top.

£14.95

PRICES

All prices include VAT and Postage (UK), Europe add £1. For courier service, add £4.

2 Mbyte RAM Expansion

Fitted in seconds, no soldering, simply plugs into expansion port. More space for data storage, faster program execution. For Amiga 500 or Amiga 1000

£549

512K RAM Expansion

Upgrade to 1 Megabyte, fitted in seconds, no soldering, simply plugs into slot. With battery backed clock to retain time and date.

£109.95

30 Mbyte Hard Disk

For Amiga 500 / 1000
Supplied ready to go
Built in power supply
Includes Cables and software
Upgrade to 60 Mbyte
12 Month Guarantee

£499.95

Multi disk drive

3.5" + 5.25" Slimline drives. Fit directly into back of computer. 3.5 - 1Mbyte drive. 5.25 - IBM / ST compatible. 40 / 80 tracks. Includes connecting cables. No more to buy.

£209.95

Floppy Switch Box

- Connects up to 3 disk drives at the same time
- No need to turn your computer on / off, and disconnect cables

£49.95

3.5" Disk Drive

- Slimline 1 Mbyte drive
- Fits directly into back of computer
- Includes connecting cable, no more to buy

£99.95

5.25" Disk Drive

- Slimline Drive
- 100% IBM and ST compatible
- 40 / 80 tracks
- Fits direct into back of computer
- Includes connecting cable, no more to buy

£129.95

MIDI Interface

Full MIDI interface for Amiga 500 / 2000 or 1000. MIDI IN, MIDI THRU, MIDI OUT (3). Compatible with most leading MIDI packages. No need to pay more.

£24.95

Amiga Sound Sampler

An exciting musical sound sampler with the following facilities:

a) 4 channel STEREO SOUND.
b) Sound sequence up to 150 BLOCKS.
c) Definition of 100 SONG SEQUENCES.
d) Up to 50 samples can be loaded and edited at THE SAME TIME.
e) CUT, DELETE and PASTE.
f) Defined BLOCKS can be saved to disk.
g) BLOCK BUFFER enabling re-use of previously defined blocks.
h) RECORD from 500Hz to 29KHz in 8 bits.
i) Fully integrated SOUND EDITOR used under TUITION with PULL-DOWN MENUs.
j) ZOOM facility enabling you to examine sample closely.
k) Ability to set your own ZOOM RATE.
l) SLIDER BOX enabling you to search through sample quickly.
m) SONG SEQUENCES can be played through BOTH speakers, LEFT or RIGHT, or a mixture of the three.
n) STUTTER, FADE IN AND OUT, ECHO, FLIP and REVERSE effects easily obtained.
o) Full VOLUME control over EACH SONG SEQUENCE.
p) Sound produced can be used in your own programs.
q) Works with both .5 MEG and 1 MEG machines.

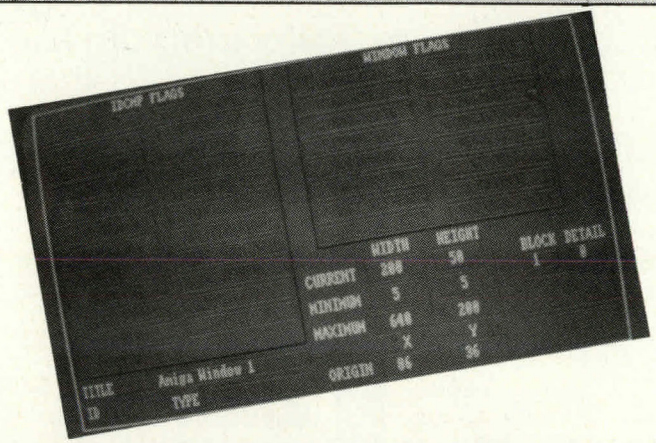
£69.95

Robtek

Robtek Ltd. Unit 4, Isleworth Business Complex, St. Johns Road, Isleworth, Middlesex TW7 6NL
Order Hotline: 01-847 4457 / 01-847 4458

continued from page 45

POWER WINDOWS



window they will appear, set up a pointer to your own image data and give the label of your source routine that will execute when selecting the relevant gadget. Power Windows will even load IFF formats imagery to define the gadget.

When you have finally completed designing your application it is time to select the big one. Pulling down the "project" menu will reveal the hallowed words . . . GENERATE SOURCE CODE. Prompting you for a file name, Power Windows will write a text file to the selected drive. Options are available here to enable/disable source code generation for any or all of the following: screen, windows, menus, render, palette, gadgets, windowtext and events. Code may be generated in assembly, Manx or Lattice "C" or Modula 2 and code generation is extemely fast, even for large developments. Inspecting the resulting file will reveal the relevant structures in all their glory, complete with comment field, although this may be omitted if memory is tight. This file is now easily merged with your main program, depending on your particular source editor and all that is left for you to do is write the code for the application program itself.

To sum up, Power Windows is to Amiga programmers what Deluxe Paint is to Amiga artists. If you are going to program the Amiga using the Intuition functions and you don't use Power Windows then you are a fool. It really is that good and I cannot recommend it highly enough.

Price:£59.95. ***G.Z.***

Contact: Burocare Computer Systems, 211 Kenton Road, Kenton, Harrow, Middx. HA3 0HD. Tel: 01 907 3636.

A PLEA TO DEVELOPERS

This is a plea from a commercial user of the Amiga to all the developers of the brilliant software that we use. Please could you incoporate a simple feature in future releases that would make my life, and (I suspect) a lot of other people's lives, a lot easier. I refer to the use of script files to control software and I shall outline our uses of this, and why I believe the feature would be easy to incorporate, below.

Preplay produces computer animations for the advertising industry, and we regularly use all the major packages, i.e. DeluxePaint, DigiPaint, PixMate, Butcher, DigiView, VD3 (video digitiser), AudioMaster and Sculpt3D. It is the last in this list, Sculpt3D, that fostered this idea.

I cannot be certain, but it seems to me that this marvellous program existed in a less friendly form before being 'Intuitionised' and relased onto the mass market. This is revealed by the script language that mirrors the menu selection so accurately. This is one of the joys of Intuition, every command for most packages can be laid out so logically on menus, that frequently the manual is simplified down to a list of menu commands and what they do. My own programming experience suggests that good programs are constructed from many modules that are called from a control module whose task is to field menu selections and pass parameters into them. Surely this control module can be easily altered to read a script file, leaving the program to work on time consuming tasks without user intervention.

Let me identify some ways that I could put such a facility to good use. Frequently Preplay digitises 40 or 50 video images at a time, using the VD3. Due to a programming oversight, the HAM pictures output by this program are only loadable into Butcher, which can then save them 'properly'. Even with a hard disk this process is very time consuming. A script that went like this:

LOAD "dh0:VD3-Capture/video00.ham"
SAVE "dh0:VD3-Butchered/video00.ham"
LOAD "dh0:VD3-Capture/video01.ham"
SAVE "dh0:VD3-Butchered/video01.ham"
LOAD "dh0:VD3-Capture/video02.ham"
SAVE "dh0:VD3-Butchered/video02.ham"
etc. etc.

could be left to run the software while we got on with something more creative.

Invariably the next stage in our process involves bringing the HAM pictures down to 32 or fewer colours. We find that the DigiView software does a superb job of this, but slowly. The script file could read something like this:

LOAD "dh0:prepared.pic"
; This picture prepared by the user to have best range of colours
FIX-PALLETTE
SET-NUMBER-COLOURS 27
LOAD "dh0:VD3-Butchered/video00.ham"
SAVE "dh0:27-Colours/video00.pic"
etc. etc.

We then use PixMate to PACK the colours at one end of the pallette, and sometimes MATCH-WITH-OTHER pallettes. It strikes me that these commands, and most of the others, could be scripted.

Even the ubiquitous DeluxePaint could benefit from this treatment. We find that when stamping a brush onto a background a smoother effect is achieved when AntiAliasing is switched on. This can take an age to draw, and could be automated thus:

ANTIALIASING-ON
LOAD.PICTURE "dh0:27-Colours/video00.pic"
LOAD.BRUSH "dh0:Walk-Sequence/man00.win"
POSITION 167 28
STAMP
SAVE.PICTURE "dh0:Finished/video00.pic"
etc. etc.

I appreciate that our heavy picture generation is in no way typical, but given the diversity of applications to which the Amiga is being put, I cannot believe that we would be the only ones to benefit from this addition. It seems easy enough to implement, so developers, please 'THINK SCRIPTS'!

Steven Rodgers

35 LONDON ROAD, TOOTING,
LONDON SW17 9JR

TEL: 01-685 9849

VISA

TIMESOFT

35 LONDON ROAD, TOOTING SW17 9JR
Tel: 01-685 9849

ARCADE

AAARGH	£14.95	Peter Beardsley Football	£14.95
Air Rally	£19.95	Romantic Adventure	£19.95
Black Lamp	£14.95	Sidewinder	£7.95
Back Lash	£14.95	Stir Crazy	£14.95
Druid II	£14.95	Star Wars	£14.95
Elf	£14.95	Soccer Supremo	£12.00
Football Manager II	£14.95	Three Stooges	£19.95
Grandslam Tennis	£14.95	Thunderbox	£14.95
European Scenery	£15.50	Vyper	£12.00
Jet	£26.95	Wizball	£18.95
Pinball Wizard	£14.95	World Darts	£7.50
Obliterator	£18.95	Xenon	£15.50

ADVENTURES/SIMULATION

Adventure Con. Set	£12.00	Jet	£29.95
Bards Tale II	POA	King of Chicago	£22.95
Battleships	£12.00	Return to Atlantis	£19.95
Beyond Zork	£17.95	Shadowgate	£19.95
Chessmaster 2000	£18.95	Sherlock Holmes	£24.95
Dark Castle	£19.95	Strike Force Harrier	£19.95
Destroyer	£19.95	Spitfire 40	POA
European Scenery	£15.50	Three Stooges	£23.95
Interceptor	POA	Time & Magik	£15.50
Flight Sim II	£29.95	XR35	£7.50
Jinxter	£18.95		

UTILITIES

Analyze	£127.95	Organise	£79.95
BBS PC	£79.95	Publisher 1000	£175.00
Graphic Tablet	£295.00	Pascal	£75.00
Lattice C	£129.00	Scribble	£75.00
Lattice C. PRO.	£275.00	TV Text	£75.00
LISP	£125.00	Zuma Ponts	
Music Studio	£18.00	1-3	£29.00 each

WIDE RANGE OF IMPORTS AVAILABLE

ACCESSORIES & HARDWARE

Pro 5000 Joystick	£14.95	Disc box (80)	£12.00
Speed King Joystick	£12.00	Mouse Mat	£4.95
Atari Joystick	£6.95	Mouse Controller	£22.95

PHONE FOR LOW PRICES ON A500

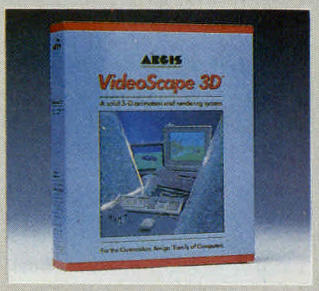
Phone orders are welcome
Please make cheques P/Orders Payable to:
TIMESOFT
Phone if you don't see what you require

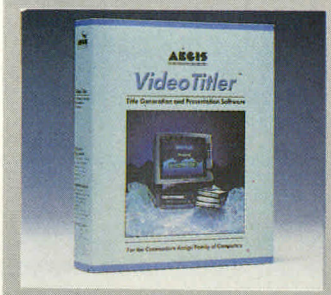
AEGIS

Desk Top Video

VIDEOSCAPE 3-D

Sophisticated real time or single step 3D animation, selectable camera viewpoint, focal zoom length and light source. Diffused and specular light surfacing. Multiple colours in any of 4 resolutions including overscan. Import IFF pictures as foreground or background, save results in IFF. Object library included.



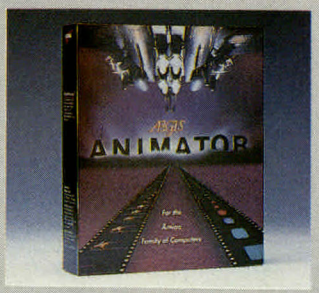


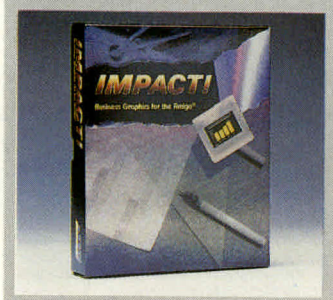
VIDEOTITLER

A powerful titling package using Amiga fonts and multicolour fonts. Poly-font system caters for stretching, rotating and precise manual kerning. Effects include neon glow, 3-D block, thin/fat edge, emboss and balloon. Slide show transitions (manual or automatic) include wipe, fade, dissolve, checker, random, diamond, burst and zig-zag. Many more features.

ANIMATOR/IMAGES

2-D animation with special features including controlled movement of objects, metamorphic changes from one shape to another, cel 'flipping' and colour cycling. Create 32 colour backdrops with the powerful 'Images' paint package.





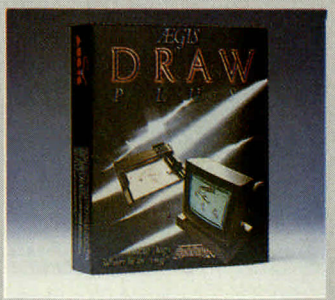
IMPACT

Create graphical presentations including bar, line and pie charts and scattergrams. Area charts can be stacked, overlapped, horizontal or 3-D. Combine charts, tables and icons with lines, circles, rectangles, arcs and text. Animate the output and record to video or take prints or slides.

Design

DRAW PLUS

A multi-layer drawing system for designers and architects. Features include different drawings in different windows, multiple colours, multiple zoom, 1/1000th accuracy, gridsnap, data snap, auto-dimensioning, rounding, smoothing, ellipses, and many more. User creatable parts libraries.



For your nearest dealer call:
HB Marketing Ltd Brooklyn House,
22 The Green, West Drayton,
Middlesex, UB7 7PQ

on: 0895 444433
FAX: 0895 441962
TLX: 934689 HBMK

HBM

LAN COMPUTER SYSTEMS

SHOW ROOM OPEN MON TO SAT 10.30am to 5.30pm

ONE OF EUROPES LARGEST AMIGA CENTRE

PACKAGE 1

£369.00 inc VAT

Amiga A500 computer
Amiga A500 computer
FREE mouse mat
FREE dust cover
FREE Deluxe Paint 1
FREE mouse controller
FREE 20 fantastic programmes condensed onto 2 disks for your convenience.

££ Save over £100.00

PACKAGE 2

£399.00 inc VAT

Includes package 1 but also includes Music Studio, Ports of Call, Interceptor.
Save over £200.00

PACKAGE 3

£499.00 inc VAT

Includes package 1 but also includes The Works, (A Word Processor, Database, and Spreadsheet) Okimate 20 Colour Printer.
Save over £300.00

COMMODORE PC1

MSDOS Personal Computer with 512K Ram Single disc drive and monochrome monitor

AMIGA A2000

Huge expansion capability, 1mb RAM as standard, boards for PC, AT+ UNIX facilities available shortly, RAM expansion to 8mb with Winchester discs available

MONITORS

1084 High Res Col monitor	£199.00+VAT
1084 monitor if purchased with computers	£189.00+VAT
Philips 8833 monitor	£219.00+VAT
Philips 8833 monitor (if purchased with computer)	£209.00+VAT
High resolution monochrome monitors from	£69.00+VAT

ACCESSORIES

A501 RAM expansion	£99.00 inc VAT
Mouse mat	£4.95 inc VAT
Amiga dust cover	£4.95
Philips/1084 dust cover	£4.95
3½" disk drive cleaning kit	£7.95
TV modulator	£23.75 inc VAT
10 Sony D/S 3.5 disks	£14.95 inc VAT
20 Sony D/S 3.5 disks in 80 capacity lockable box	£29.95 inc VAT

DRIVES

Cumana CAX354	£99.95 inc VAT
LAN 5¼" drive includes Transformer and 10×5¼ disks	£119.95 inc VAT
Supra 20mb hard disk	£499.00+VAT

PRINTERS

Citizen 120D	£119.00+VAT
Panasonic KXP 1001	£145.00+VAT
Star LC 10 Printer Stand Paper and Cable	£169.00+VAT
Star NB24 – 1024 Pin Printer	£399.00+VAT
Nec 24 Pin Printer	£259.00+VAT
Epson LX 800	£179.00+VAT
256K Printer Buffer	£199.00+VAT
Printer Cable	£14.95+VAT
Box of Paper 2000 Sheets	£13.00+VAT
Printer Stand	£9.95+VAT
Printer Stand	£26.00+VAT
Printer Ribbons from	£3.00+VAT

SPECIAL OFFER
Star LC10 Colour Printer (Parallel Version) £199+VAT

LC10 Colour Printer Commoddore 64/128 £199+VAT

Okimate 20 Colour £139.00 inc VAT

All prices exclusive of VAT + delivery unless otherwise stated

BOOKS

3645...GD Graphics-Sound	£17.45
2065...Advanced Amiga BASIC	£16.95
2754...Amiga Applications	£16.95
3646...Amiga DOS Manual	£22.95
2747...Amiga DOS Ref Guide	£12.95
3293...Amiga Handbook	£15.95
1996...Hardware Ref Manual	£23.70
1995...Intution Ref Manual	£23.70
3815...Microsoft BASIC Prog	£18.45
3149...Prog Handbook Vol 1	£24.95
2755...Programmers Guide	£16.95
2744...Programmers Guide	£16.45
3536...Prog Handbook Vol II	£24.95
2001...ROM Kernel Ref Man Exec	£23.70
2000...ROM Kernel Ref Man Lib	£33.20
2898...Amiga Systems I Introd	££9.95
3727...Becoming an Amiga Artist	£18.45
2756...Beginners Guide	£16.95
2757...Elementary Amiga Basic	£14.95
2752...Inside Amiga Graphics	£16.95
3031...Inside the Amiga with C	£19.95
3936...Kickstart Guide	£12.95
3310...Programmers Guide	£24.95
2717 .The Amiga	£16.95

Extensive Library of Books on Show

LANSOFT CLUB

The Club for St and Amiga users everywhere all prices include VAT.

* Special Introductry Prices *

* Membership – £20 – (per year) *

* Save up to 40% off Software *

* 35% – Off Application Software *

* Special Club Prices on Cumana Disk Drive £89.00 inc VAT *

* A501 Ram Expansion £99.99 inc VAT *

01 597 8851
1063 HIGH RD, CHADWELL HEATH, ROMFORD, ESSEX, RM6 4AU

HOW TO ORDER

Enclose letter with cheque, postal order or credit card number for amount including VAT and delivery charge. Credit card holders may order by telephone. Contact sales desk. Dispatch normally in 24 hours.

Official Orders from Educational Establishments, Local Authorities and Government departments welcome. Contact Education Department. FAX: 01-590 6057. Telex: 995548. Telex: 995548.

LANSOFT CLUB SOFTWARE

Works	£69.00
Digview	£115.00
Ports of Call	£15.00
Three Stooges	£16.00
Football	£5.00
Baseball	£5.00
Hacker II	£5.00
Moebius	£13.00
Eagles Nest	£11.00
Kings Quest	£7.00
Aarrg	£11.00
Palace Barbarian	£11.00
Pinball Wizard	£11.00
Shadowgate	£20.00
Leatherneck	£11.00

SPECIAL OFFERS

Amiga Joystick
£9.95 in VAT

Citizen 120D Printer
£99.00 + VAT

Commodore MPS 1200P
£99.00 + VAT

Box of Ten 3.5" Discs
£14.95 inc VAT

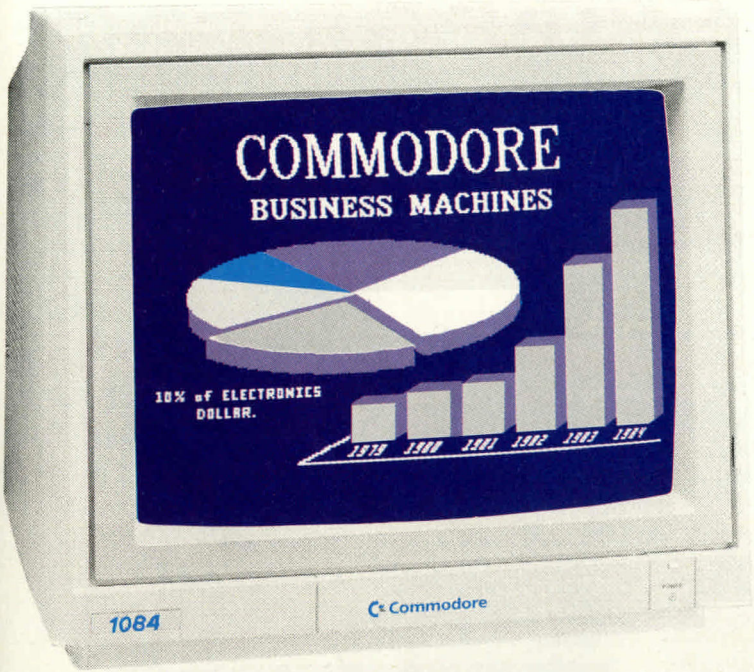
Delivery charges on specials

£2.50 up to £20, £5.00 up to £90, £10 up £100

CCI No2

LAN COMPUTER SYSTEMS

01-597 8851



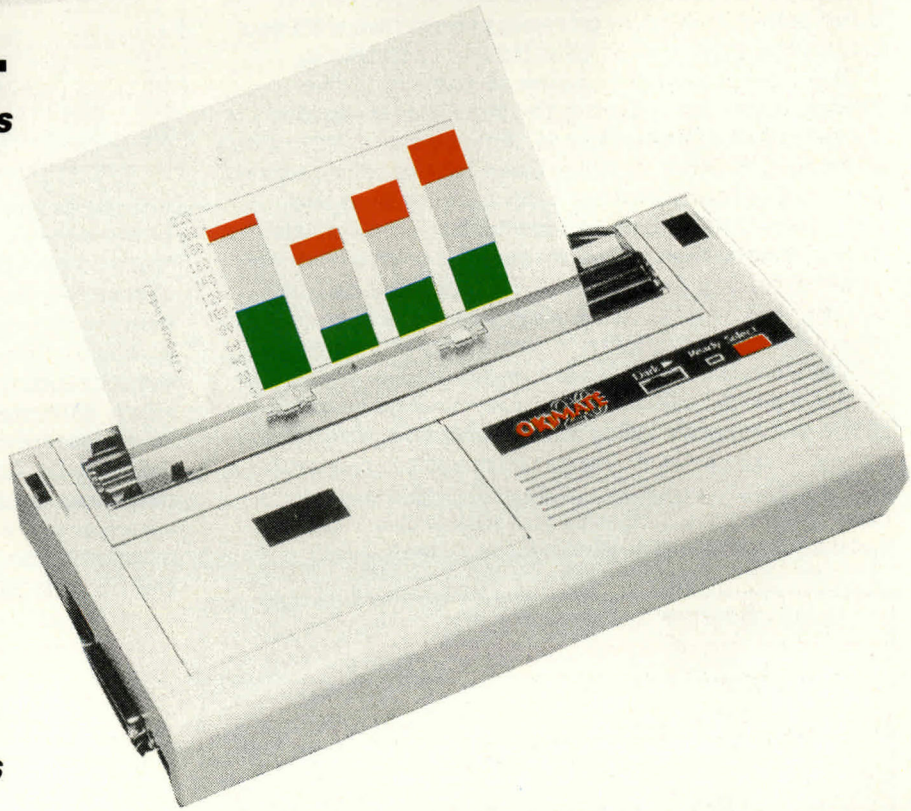
£229.00 INC VAT
INCLUDING ALL CONNECTING LEADS

SPECIAL SOFTWARE OFFERS

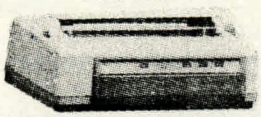
	R.R.P.	Our Price
Ports of Call	39.95	15.00
Three Stooges	29.95	16.00
Aaargh	19.95	11.00
Palace Barbarian	19.95	11.00
Leatherneck	19.95	11.00
Pinball Wizard	19.95	11.00

Prices inclusive of VAT, please add £1.00 for delivery UK + Europe.

OKIMATE 20
ONLY
£149-95 INC VAT
INCLUDES ALL CONNECTING LEADS



LATEST 24 PIN INTRODUCTION
A SURE WINNER!
NEC Pinwriter P2200
(80 col)

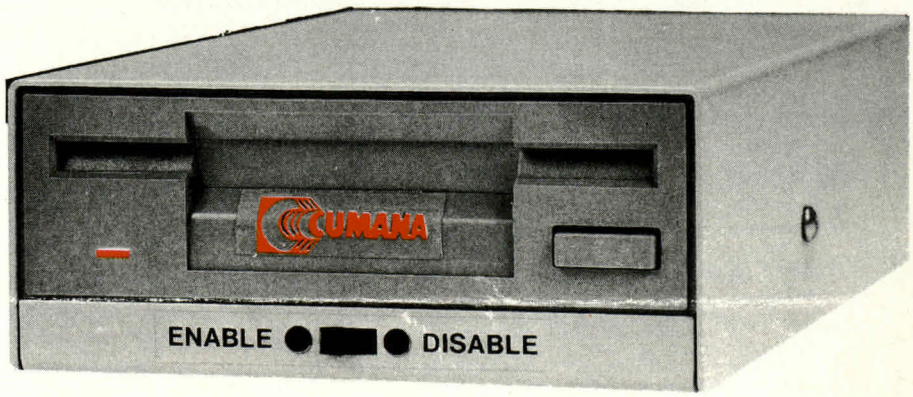


Print rate—168cps/56cps LQ
Paper handling—Unique front feed allows insertion without removing already installed continuous paper
Graphic—360 x 360dpi

Best of all Made in UK!!

£299.00 INC VAT
INCLUDING ALL CONNECTING LEADS

WHY NOT TREAT YOURSELF TO TEN D/S 3½ DISKS FOR AN EXTRA £10.00 INC VAT.



AMIGA CUMANA

CUMANA EXTERNAL DRIVE FOR AMIGA £99.95 INC VAT

5¼ INCH DISK DRIVE WITH P.S.U. AND TRANSFORMER
SOFTWARE £149.95 INC VAT

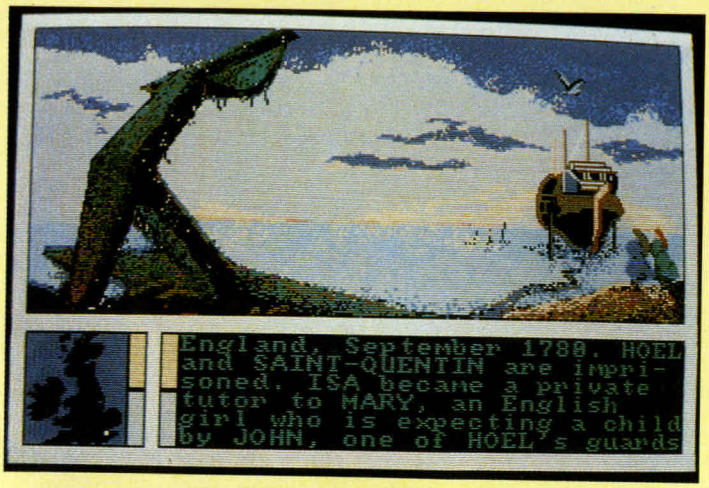
Passengers on the Wind

Passengers on the Wind is Infogramme's entry into modern comic strip software, Andy Moss investigates

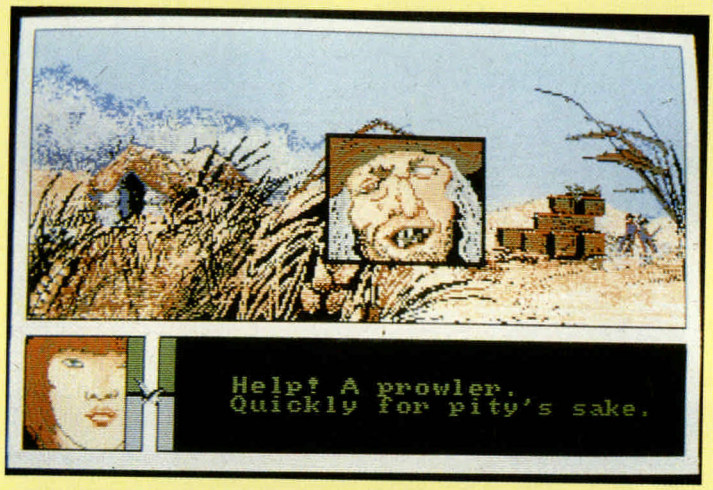
Francois Bourgeon is 'infamous' in France as the recipient of the Grand Prix Du Salon D'Angouleme, the most prestigious reward possible for comic strips. His pride and glory is a series of illustrated stories set in the Eighteenth century, concerning the adventures of a usurped Countess. The critics apparently hailed the perfection of the script and the accuracy of the strokes to make Passengers on the Wind a modern day classic, selling over 3 million copies. What Infogrammes have tried to do is to convert the whole thing into a computer adventure cum film with you taking the part of over 13 different characters.

The adventure takes place on the eve of the French revolution, during the time that a regular slave trade between France, America and Africa was at its height. Hoel, a sailor flees France when falsely accused of murder along with Isa (the usurped countess). Their missions are for him to clear his name, and for her to regain her titles. This they do after travelling through many lands, and as the player, you must find the right solutions in order to progress through all ten 'chapters' of the story.

This then is the basis for the adventure, and all is so good so far. Where the whole thing goes adrift is in the actual gameplay and screen structure. The screen is divided into three main sections, a graphic section where the main picture is displayed, a character box, which tells you which character is speaking, and a text window for .... well, text.



This is where it starts to get complicated. In every main scene (there is only one per chapter) you will have to click on a character in order to access it (Infogrammes call it 'confirming'). Unless you confirm a character, you cannot proceed with it. The



character then appears in the box to the bottom left of the screen. Next to this box are two bars called 'zones I and II'; zone I is clicked on to change the character, and zone II is used to select the appropriate text from a variety of responses. The aim is for you to control what decisions are made by each character, and how that decision affects the story. With me so far. In reality, this whole process is so cumbersome as to be frustrating in the extreme. Unless you click exactly on the bars, you get no response, and sometimes even clicking on the bar zones elicits no response, so really you get absolutely no satisfaction at all and end up totally fed up by it all. The secret of any successful game

'The aim is for you to control what decisions are made by each character, and how that decision affects the story.'

HAS to be smooth operation of the vital process of making the game run. In *Passengers on the Wind* this does not happen. That apart, the music and sound effects are very impressive, and make full use of the Amiga's facilities in this department. In the opening scene, you hear seagulls calling and waves crashing, and even a choral sound in the music score. The graphics are not Amiga state-of-the-art, but are adequate, no real improvement from the C64 version.

I am very disappointed with this release, Francois Bourgeon may well be a very talented writer and artist, but Infogrammes have not really done him justice. RATING.....POOR.

Price: £24.95

S.C.C. MAILORDER

For **the** best Amiga deals around!

HARDWARE

Amiga 500	Amiga 2000
Monitors	Printers
Floppy Drives	Hard Drives
Expansion Boards	Bridge Boards

SOFTWARE
Arcade
Adventure
Strategy
Simulation
Art/Graphics
Video/Animation
Sound/Music
Communications
Computer Aided Design (CAD)
Desktop Publishing (DTP)
Programming Aids
Languages
Word Processing
Databases
Spreadsheets
Utilities

BOOKS
Many titles available.

PERIPHERALS

Video Digisters
Graphics Tablets
Sound Digisters
Midi Equipment
Modems
Joysticks
Modulators

ACCESSORIES

Dust Covers
Mouse Mats
Connection Leads
Blank Disks
Disk Storage Boxes
Printer Ribbons
Computer Stationery

20–30% OFF SOFTWARE & ACCESSORIES
10-15% OFF HARDWARE & PERIPHERALS
NEW STOCK ARRIVING EVERY DAY – Please ring for prices and availability
TELEPHONE OR SEND AN A4 S.A.E. FOR OUR LATEST EXTENSIVE CATALOGUE!

Free Delivery (UK only) Courier & Overseas rates on request

S.C.C. Mailorder
29, Crowtree Road, Sunderland SR1 3JU.
Tel: (091) 565 5756 (24 hours)

TRI COMPUTER SOFTWARE Ltd.

The AMIGA Specialists

"Professional Page" now in stock

Full Range in Stock
A2000/A500 on permanent Demo.
Full Range of Graphic Software & Hardware in Stock
Genlocks in Stock and on Demo + Output Devices like the XEROX 4020 Printer
FutureSound and all sound Packages always in Stock
Midi Interfaces Stocked

For all your AMIGA needs.

Call 01-840 6136

Or Write To 161-169 Uxbridge Road, Ealing W13 9AU.

All major credit cards accepted
Leasing Facilities available to BUSINESS

NEWDAY Amiga Price List

Product	Price Inc VAT
Amiga 500	375.00
Amiga 500 + Mono Monitor	455.00
Amiga 50 + Colour Monitor	625.00
A500 Business pack – Mono	689.00
A500 Business pack – Colour	779.00
The Works	115.00
Word Perfect V4.1	201.25
Superbase Personal	80.00
Marauder II	34.95
Butcher	24.95
Lions Fonts	39.95
True Basic Language	59.95
City Desk	79.95
Professional Page	228.85
Aegis Animator/Images	79.95
Aegis Videoscape 3d (Pal)	94.95
DigiPaint (Pal)	49.95
Sculpt 3d Animate (Pal)	99.95
TV Show (Pal)	69.95
The Director	39.95
Page Flipper	34.95
Aegis Audiomaster	34.95
Aegis Sonix	39.95
A Drum	29.95
Dr T–48 Track Midi Studio	199.00
Dr T–Editors D50, DX etc	CALL FOR DETAILS
Amiga Soundsampler	44.99
MIDI Interfaces	CALL FOR DETAILS
Casio C2230S Keyboard	259.99
External NEC Drive	99.99
RAM Expansion	CALL FOR DETAILS
DigiView	129.99
DigiView Adaptor for A500/2000	21.99
DigiPic Frame Grabber	279.99
VD3+ Colour Frame Grabber	914.25

Please call us for prices on further products such as languges, music and utilities as due to space limitations we cannot quote all of our prices.

Newday, No. 1 Old Deer Park Gardens, Richmond, Surrey TW9 2TL. Tel: 01-948 2516

All prices include VAT. P&P at £1 per item or free on any order over £50.

The Problem Solvers

TELETEXT

A world of information at your fingertips

Teletext on the Amiga!

The Microtext Teletext Adaptor enables your Amiga to become a sophisticated Teletext receiver, giving you access to any of the free pages from Ceefax or Oracle. There's the latest news, share prices and football results, road reports, whats on TV plus much much more, hundreds of pages that are constantly updated to give you the very latest information, at the touch of a button.

Just plug in an aerial — it tunes itself in and with pull down menus and gadgets, the mouse may be used to select a page like a recipe or a weather map and then print it or save it to disc. Teletext data can be accessed by other programs and it will even read out the news!

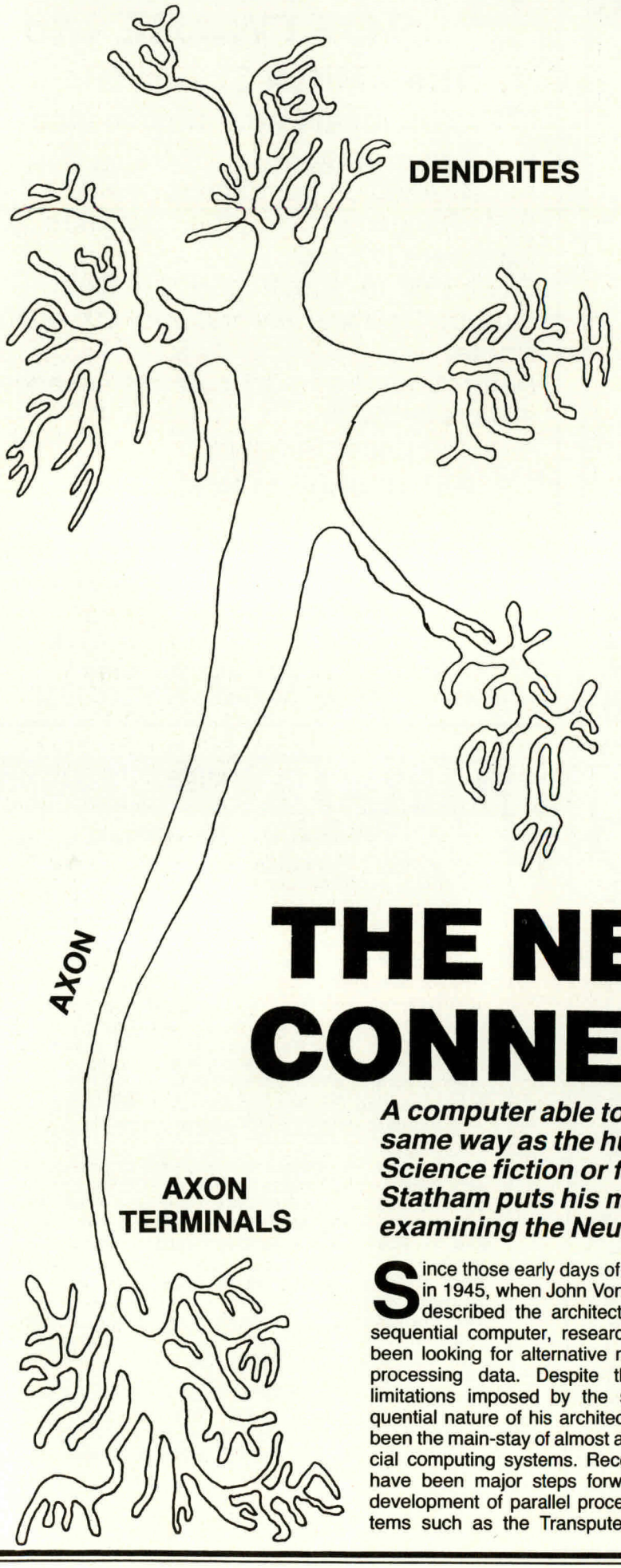
By connecting the lead provided from the Adaptor to your Amiga monitor, the monitor can be used as a colour TV!

At Microtext, we make it our business to produce the very best Teletext systems available today and with countless letters from delighted customers, Microtext has an enviable reputation for quality, high performance and service. Read what the media said about our products.....

BBC CEEFAX 'NEXT' micro-magazine said: "Very powerful tools indeed."
Your Commodore said: "I wouldn't hesitate to recommend this to anyone."
Amstrad Action said: "A well thought out product that performs admirably."
At only £124.80 + VAT for an advanced Teletext TV, its excellent value for money. VHF/UHF International version for Australia, Belgium, Denmark, Finland, West Germany, Eire, Italy, The Netherlands, New-Zealand, Norway and Sweden £169.50

VISA

MICROTEXT
Dept AM, 7 Birdlip Close, Horndean, Hants PO8 9PW
Tel: 0705 595694



THE NEURAL CONNECTION

A computer able to function in the same way as the human brain – Science fiction or fact? Alastair Statham puts his mind to examining the Neural Connection

Since those early days of computing in 1945, when John Von Neumann described the architecture of the sequential computer, researchers have been looking for alternative methods of processing data. Despite the severe limitations imposed by the strictly sequential nature of his architecture it has been the main-stay of almost all commercial computing systems. Recently there have been major steps forward in the development of parallel processing systems such as the Transputer. Another fashionable area of research is artificial intelligence or AI. Our usual computer systems rely on the phenomenal number-crunching power of the computer to process large quantities of data according to sets of relatively simple and pre-ordained rules. An artificially intelligent system must 'think for itself'. It may come as a surprise to discover that research into artificial intelligence has been in progress ever since those first days of the Von Neumann architecture. Up until recently those forty years of research produced such an apparently small reward that many people may be wondering 'Why bother at all?'

As our traditional computer systems become ever more powerful and more complex the exposure of a single failing component causing the whole system to be unusable increases dramatically. If you break just one of the major components in your Amiga the chances are that it will be totally useless until repaired. If one in ten of your brain cells died while you were reading this you would probably not even notice. Your mental functions would more than likely continue to operate at the level they always did. At worst, some of your memories may be a little more vague. This remarkable property stems from the basic nature of the brain. Rather than being a central processing unit surrounded by storage as in a Von Neumann computer it is made up of a vast collection of cells called neurons. Each neuron can stimulate up to a thousand others and receive stimulii from up to a thousand more. Each cell has a long limb called an Axon from which it transmits. Fibres from the Axon connect to each of the receiving cells. Neurons also have receiving fibres, called Dendrites, which join with the fibres from the Axons of other cells. The point at which they join is called a SYNAPSE. The output produced by a Neuron is dependent on the input it receives. The inputs are not digital in the sense that each is worth a zero or one vote on the output state of the cell. Each input is given a weighted relative importance and

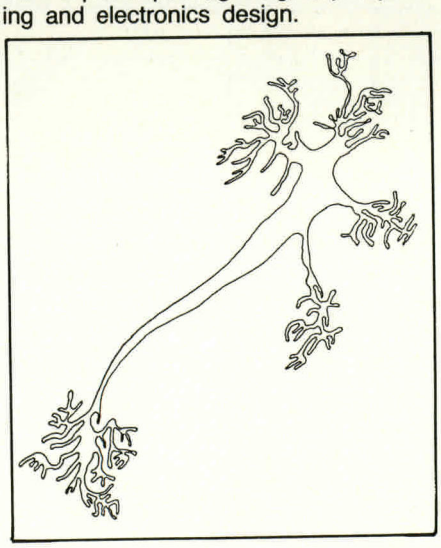
while some excite the cell others inhibit it, performing a function similar to a boolean NOT. This structure works so well and is so different from the Von Neumann Architecture that it is not at all suprising for it to be of great interest to computer scientists.

'If one in ten of your brain cells died while you were reading this you would probably not even notice.'

One of the areas which has caused the most headaches on traditional machines is image and speech recognition. It is not too difficult to compare two bit patterns. Normal machines can detect differences between two patterns very easily. What is far more difficult is checking whether two patterns are sufficiently similar to be a match, when the differences are not consistent or easily predictable. The brain is extremely good at recognizing visual or aural patterns and copes with major data errors and omissions with remarkable ease. Image recognition has also been a favoured application for AI researchers. The original research was based on a parallel concept very similar to the function of the brain's neural network. The designs included electronic versions of the neuron which were simple switches with many inputs and outputs. When enough inputs were switched on the switch would activate and send a signal to its neighbours on the net. A piece of data would be represented by the collective on/off pattern of the switches. When idle, all the switches would be in the off state but the data still held by the state of the junctions. This was achieved by making the junctions not a simple connection but a variable amplifier/inverter able to strengthen, weaken or even negate the transmitted signal. The pattern of the connection settings determined the output produced by a given input pattern and thereby formed the basis of the memory. If, under the control of a master area, separate portions of the network were to process their own part of an image it was hoped that whole images could be processed at once instead of bit by bit. The system could learn related patterns by enhancing the effect of connections producing accurate answers and limiting the effect of those causing errors. As the overall connection pattern became more accurate the system would get better at its recognition task. In the late fifties the Perceptron was built using these concepts. It was discovered, however, that the size of the network was severely limited by the complex and time-consuming task of adjusting the connection levels.

By the late sixties the Perceptron had fallen from favour and research switched to Expert systems, running on Von Neumann machines. Expert or Knowledge-based systems are little more than large collections of rules. They are used to offer alternative solutions, compare the merits of alternatives, explain solutions, or ask the questions required to arrive at an answer. The user interface is usually plain language, which means that most expert systems appear to work like an adventure game. The user asks a question or gives an instruction and the system either provides information or asks a question. The rules controlling the system are partly programmed and partly derived. The basis of the knowledge is a set of rules about the subject on which the system is expected to be expert. These rules are normally provided by human experts assisted by Knowledge-Engineers. New rules may be derived from the combination of existing rules and data fed to the system. Once working the system can become more expert than any living source of information. These systems still are limited by their inability to deal effectively with abstractions or incomplete, uncertain data. They are, however, particularly effective in the fields of medical diagnosis and prescription, geological prospecting and electronics design.

'Expert or Knowledge-based systems are little more than large collections of rules.'



As the limitations of Expert Systems became apparent, interest was renewed in the old Neural-networks. New technology and ideas were applied. The new neural systems were based on the old type with a few major differences. On the old systems each switch performed an on/off function according to its inputs. The new system uses artificial neurons which respond to their inputs to a variable degree. Instead of an immediate switch there is a gradual and measured response. The ability to affect the behaviour of a neighbouring neuron and the introduction of feedback loops eases the control of the system. New algorithms now exist to determine the values passed to equations which define the settings of each connection weighting. The system can now retry different settings until it has found the correct ones. This removes the old size restrictions and allows much more complex nets than had ever been thought possible. The ability to influence an adjacent neuron provides more consistent data in a visual system, which allows the recognition of texture. Awareness of surrounding data assists in the detection of boundary conditions such as the edges of shapes or, where distance information is available, the edges of objects.

'The day is fast approaching when the intelligence at the disposal of mankind may not all be of natural origin.'

These new developments have also been utilised in the production of systems able to read text and speak the ouput. A well known example of this is NETALK. This system, developed at Princeton University, consists of hundreds of neurons with thousands of connections between them. Provided with a list of phonemes Netalk read through pages of text, teaching itself the complex associations between the phonemes and the letters on the page until it could correctly pronounce over ninety percent of the letters. Expert systems exist to perform the same function but the effort required to define the rules is enormous. Given a collection of correct examples Netalk discovered the rules for itself. All of this is still very much in the development stage but the day is fast approaching when the intelligence at the disposal of mankind may not all be of natural origin. One major computer company has already announced that by the end of the year they hope to release their first commercially available neuro-computer. It is planned to be the first PC to work in the same way as a cerebral neuron-net and should only cost a few thousand pounds. Over forty-years of research has at last started to show a potentially useful return.

A.S.

FREE MEMBERSHIP!

For FREE membership of the fastest growing Amiga user-club simply order any of the following discounted software titles. Membership brings many special services which thousands of very satisfied Amiga owners have already found out. We feel we offer a service vastly superior to everyone else and our regular disc updates (FREE to club members) underline that fact. Seventeen Bit Software – That bit better than the rest. The only commercial/PD software club you'll need.

TITLE	RRP	OURS	TITLE	RRP	OURS
Interceptor	£24.95	£17.95	Football Manager 2	£19.95	£14.95
Sidewinder	£9.95	£7.95	Aaaargh!	£19.95	£14.95
Barbarian (New)	£19.95	£14.95	Faery Tale	£29.95	£22.95
Sonix	£57.95	£44.00	Photon Paint	£69.95	£54.95
Leatherneck	£19.95	£14.95	Hollywood Poker	£9.95	£7.95
3 Stooges	£29.95	£23.95	Buggy Boy	£24.95	£17.95
Bubble Bobble	£19.95	£14.95	Black Lamp	£19.95	£14.95
Druid 2	£19.95	£14.95	Garrison 2	£24.95	£17.95
Obliterator	£24.95	£17.95	Wizball	£24.95	£17.95

These are just a very small range of what is available. Please phone if the title you want is not shown – we will give you our special price which will include FREE membership and our latest update disc!!

What our members say about our Public Domain discs . . .
'. . . the club's standards are very high . . . your discs are superb . . .' A. NICHOLS
'. . . by far the best thing to happen to the Amiga for a long time . . .' A. GRIGGS
'. . . It makes a pleasant change to find someone who wants to be of service to people without taking them for a ride.' S. WALLINGTON
'. . . best Amiga club going' N. KING '. . . excellent service . . .' A. ARGENT
'. . . Update 2 was brilliant!' J. KUMPITSCH 'The best service I have come across in over 8 months' M. FARMER '. . . the catalogue is terrific . . . D. BISHOP.

FOR OUR LATEST UPDATE DISC INCLUDING A GREAT DEMO, THE BEST VIRUS KILLER AVAILABLE, NEWS, REVIEWS AND DETAILS OF OUR GREAT PD LIBRARY JUST SEND £3 (INCLUDES MEMBERSHIP) TO:

17 BIT SOFTWARE
DEPT AU, P.O. BOX 188
LEEDS LS1 6BS
TEL: 0532 420043

ACCESS & VISA ORDERS WELCOME OVER THE PHONE MON-SAT 9.00-5.30 – INTERNATIONAL ENQUIRIES WELCOME

HUMGOLD COMPUTERS LTD.
for your AMIGA requirements

Commodore Amiga Software	RRP	Our Price
AC Basic	£194.99	£158.44
AC FORTRAN	£295.00	£243.37
Aegis Animator/Images	£103.50	£85.39
Aegis Videoscape 3D	£143.75	£118.60
AiRT	£55.00	£46.07
Arazoks Tomb	£28.75	£23.37
Arena and Bratacus	£24.94	£22.21
Aztec C Compiler Professional	£199.00	£164.17
Barbarian	£24.94	£20.59
Butcher 2	£27.00	£22.61
Cambirdge Lisp	£149.95	£123.71
City Desk	£99.95	£82.46
Dark Castle	£24.94	£19.95
Defender of the Crown	£29.95	£24.70
DigiPaint (PAL)	£40.00	£34.99
Director	£47.00	£39.36
Express Paint	£57.99	£48.58
FACC II	£24.00	£20.10
Feud	£9.99	£7.99
Firepower	£24.94	£19.34
Flight Simulator 2	£49.94	£40.58
Guild of Thieves	£24.94	£19.96
Kind Words	£49.00	£40.42
Kings Quest Triple Pack	£24.99	£20.00
Knight Orc	£19.95	£15.96
Lattice C V4.0	£172.50	£142.31
MaxiPlan Plus	£149.95	£123.71
MCC Macro Assembler	£69.94	£57.71
MCC Pascal	£89.94	£74.20
Modula 2 Standard	£99.95	£82.46
Ninja Mission	£9.99	£7.99
Photon Paint	£70.00	£57.75
Ports of Call	£39.95	£32.36
Quaterback	£51.69	£42.64
Rogue	£9.99	£7.99
Sculpt 3D (PAL)	£77.00	£62.57
Space Quest	£24.99	£19.99
Space Ranger	£9.99	£7.99
Starglider	£24.94	£20.59
Stationfall	£29.99	£20.75
Superbase Personal	£99.95	£82.46
Terropods	£24.94	£19.96
The Art of Chess	£24.94	£20.59
The Director	£57.44	£47.39
Public Domain Disks		£2.75

Commodore Amiga Hardware	RRP	Our Price
1 MB NEC External 3.5 Inch Drive	£99.95	£91.21
Digiview 2.0 (PAL)	£165.00	£140.25
Fast Matrix Printer 480 cps 80 col	£424.35	£360.53

Commodore Amiga 500 Hardware	RRP	Our Price
20 MB Supra External Drive	£698.99	£620.36
Access 64	£59.95	£49.46

Hardware For Any Machine	RRP	Our Price
HP DeskJet Printer	£914.25	£786.26
NEC P2200 24 Pin Printer	£454.25	£390.66
NEC P6+ 24 Pin Printer	£688.85	£585.52
NEC P7+ 24 Pin Printer	£879.75	£747.79
PJ1080A Colour Ink Jet Printer	£573.85	£523.64
Xerox 4020 Colour Ink-Jet Printer	£1437.50	£1209.02

Orders (Cash/cheque only) to:

HUMGOLD COMPUTERS LTD
(Mail order dept.)
85 Longhurst Road,
Lewisham, London SE13 5NA

01-852 3992
(ansafone) for full price list
All prices are subject to change without notice.

AMIGA CENTRE SCOTLAND

4 HART STREET LANE, EDINBURGH. EH1 3RN
Tel. O31-557-4242 : FAX O31-557-3260

SUPERCHARGE YOUR AMIGA

WE SPECIALISE IN HIGH PERFORMANCE UPGRADES FOR THE FULL AMIGA RANGE OF COMPUTERS.

PLEASE TELEPHONE FOR FURTHER INFORMATION ON :

CSA 68020 / 68881 - 68030 / 68882 UPGRADES
68881/68882 PROCESSORS RATED TO 25 Mhz
UNPOPULATED 68020 BOARDS
STATIC AND DYNAMIC RAM BOARDS
SCSI HARD DISK CONTROLLERS

HURRICANE ACCELERATOR BOARDS
68020 / 68881 COMBINATION
32 BIT MEMORY BOARDS

MICRON MEMORY EXPANSION
0 WAIT STATE DESIGN
2 Mb CAPACITY

ASDG MEMORY BOARDS
ZORRO II 2MB UNPOPULATED
ZORRO II 8MB UNPOPULATED
BOTH WITH RECOVERABLE RAM DISK AND DIAGNOSTIC SOFTWARE.

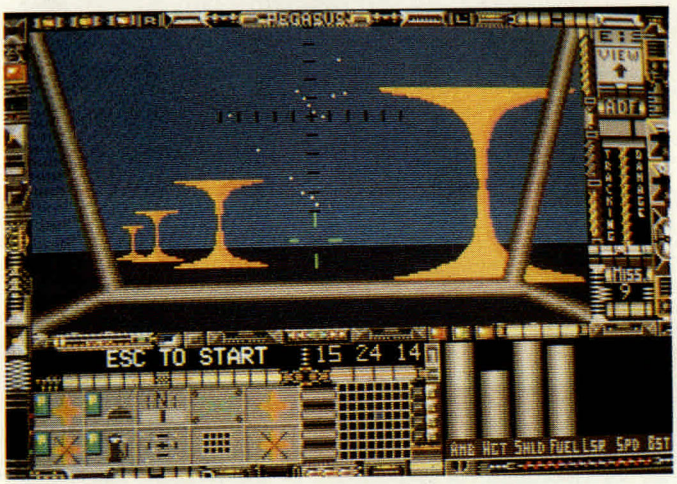
THE COUNTRIES LEADING UPGRADE SPECIALISTS

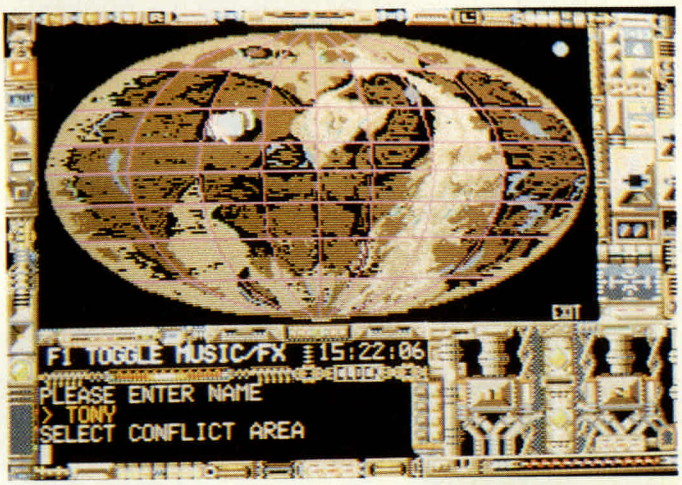
PHANTASM

Exocet

From its name and cover artwork depicting a pouting female set against a background of space battle, I was expecting something very different from Phantasm. In fact, the sexy woman on the cover has no relevance to the game at all.

Instead of thinking up a scenario for the game, they have taken another way out by saying that the whole thing is just a another way out by saying that the whole thing is just a fantasy. Obviously the imaginations of the designers are like the Spanish philospher who claimed 'Life is a dream' – the word 'fantasm' seems to be on every pop song writer's lips these days. An instruction sheet labels most of the gauges and gives a brief explanation of your task.





You have found yourself on a moon inhabited by an aggressive race that shoot to kill. Sprinkled throughout 64 sectors of the moon are 8 re-constitutions, all of which must be found and destroyed. Select which sector to start on from the map and beam down. From here on, Phantasm looks and feels very similar to CRL's Tau Ceti but

'A radar is positioned at the top of the screen, showing the positions of monuments (chunks of rock), aliens, beacons and any other visible objects'

with Amiga's advantages. A radar is positioned at the top of the screen, showing the positions of monuments (chunks of rock), aliens, beacons and any other visible objects. All are shaded on one side to give the effect of low sunlight.

Flying saucers glide around taking shots at you with their lasers. Your lasers can be used to zap them back, or if you run into a group of them, the speed booster will be your best form of escape. Most of the scenery is somewhat basic and lacks special interest, except the alien ships. First impressions lead you to think there is a lot to Phantasm, but once you know what you are doing you realise it is really very simple. It seems to be trying to imitate Tau Ceti but turns out more like Novagen's Backlash. However, not too much of Backlash's lightning speed or graphic detail are present, though it does have a substantial challenging factor. What you are left with is in reality is a 3D shoot 'em up which many will like. A passable but unremarkable piece of music can be switched off during the game for a few blippy effects.

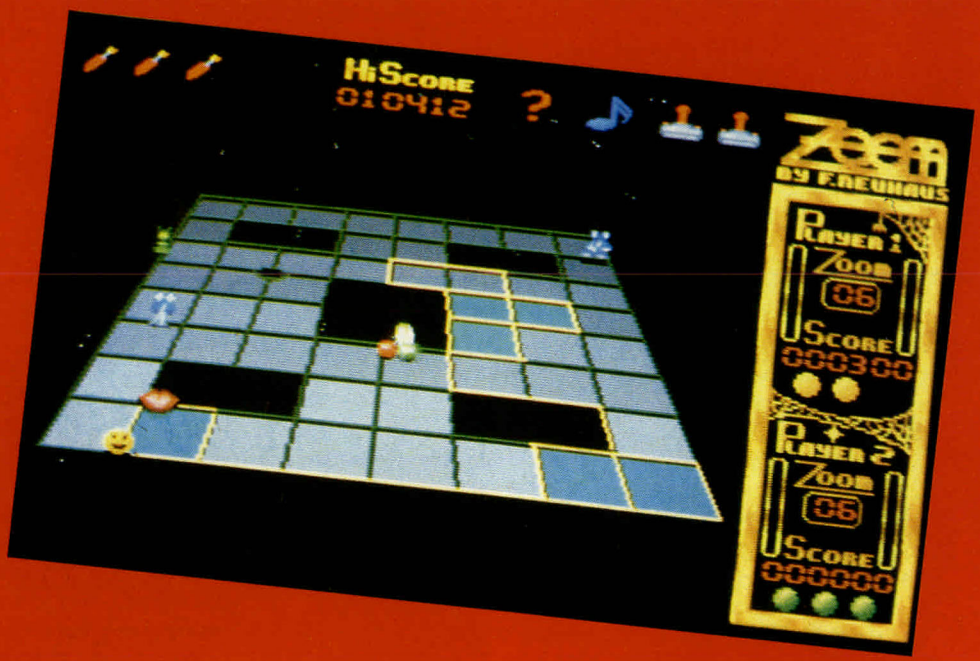
The thought of searching the 64 sectors for a mere 8 re-constitutions is enough to put me to sleep (but then I have difficulty keeping awake these days for anything! So I can't blame 'Phantasm'!) What the game needs is a little more real action. the programmers were obviously trying for something special but have really not driven their own imagination far enough to justify the use of the word 'fantasy', which suggests something more exciting than has been delivered here.

B.V.

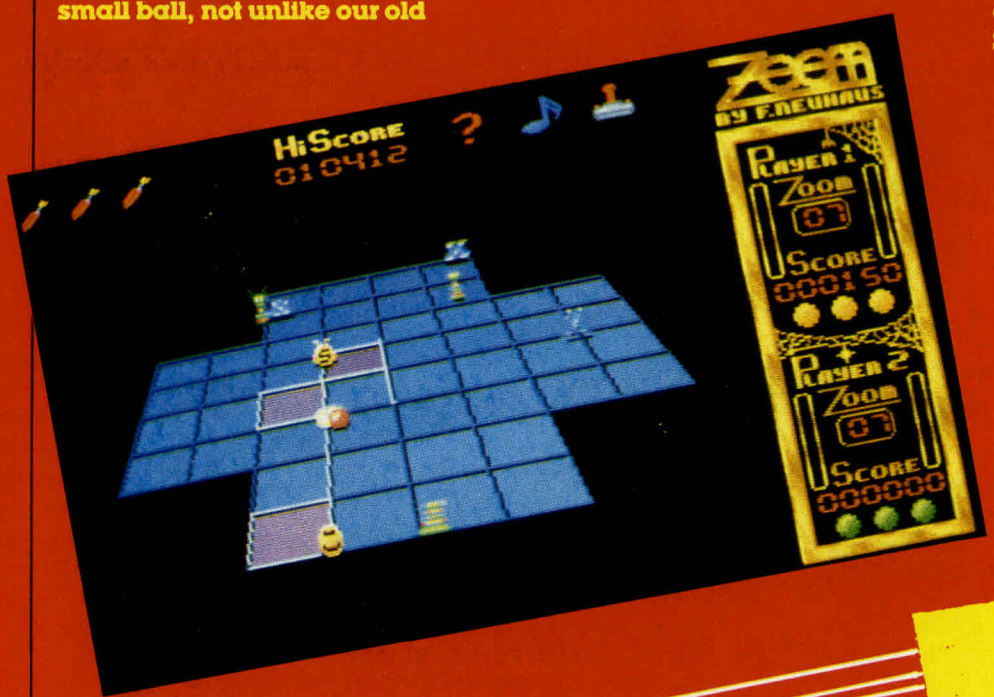
Graphics: 5
Sound: 6
Playability: 4
Value: 4
Price: £24.95

One of the most popular games with the visitors to the recent Commodore show was Discovery's Zoom: a simple game in concept which combines two early arcade games with a few agreeably original features.

A weird opening sequence precedes the game. A bunch of Pacmen strut around a stage performing tricks and generally having a terrifically amusing time. All this is accompanied by sampled cheers and hoots from the audience and a fittingly strange tune. At the Show, people watched fascinated for ages. When you have had enough of that you can load up Zoom!



There are three modes to choose from: one player, two player and two player competition. Two player mode has the players alternating turns in the usual way. Competition mode puts both into the game at once. Your on-screen hero is a small ball, not unlike our old friend Pacman but bouncier. Instead of eating dots, he has to fill in every square on the current grid by drawing trails around them. Anyone familiar with Amidar or Potty Painter will be instantly at home and thoroughly enjoying him or herself. For this is certainly a game that will appeal across the sexes – and to judge again from the Commodore Show, across the age groups too.

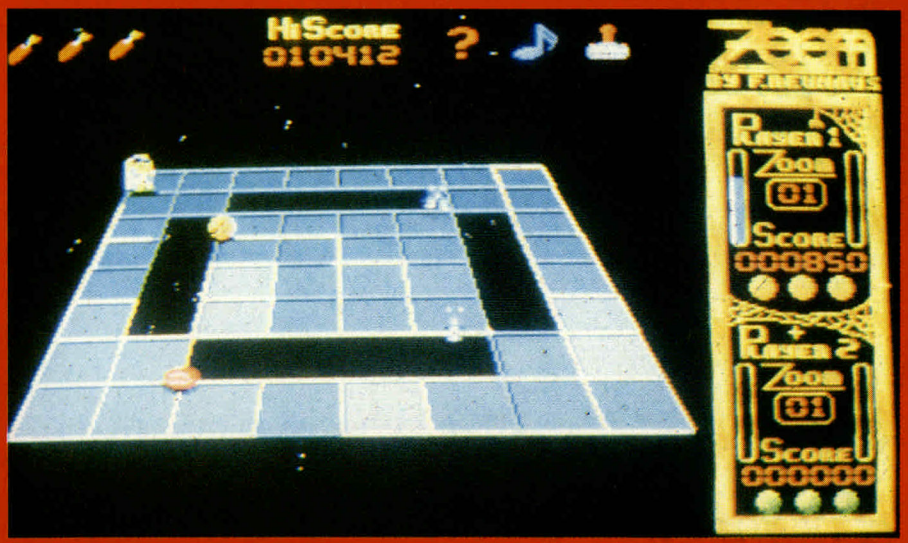


"This is certainly a game that will appeal across the sexes – and to judge again from the Commodore Show, across the age groups too"

Floating around the grid are a selection of nasties to be carefully avoided. The merest brush with an alien causes 'Pac'

to pop immediately, losing a life. There is a whole series of bonuses that, when they appear, give you extra points, help by freezing the aliens, make it possible to advance levels and so on. Your best and most effective defence against the aliens is to knock a small hole in the grid, giving time for you to make a getaway. Unlike the original painter game, Zoom is played in 3D, not a feature that alters the gamplay but it makes an extremely pleasant change and enlivens the whole look Zoom!

To spruce up the game, some very attractive graphic and sound effects have been included. The whole thing sounds very sophisticated due to its very well



a square without it filling in. Strange.

In a similar style to Arkanoid, Discovery's last game, Zoom is really a souped-up version of an established game design, and none the worse for that. It has a quality, present in Arkanoid, that can draw you back time after time, as evidenced by the way it magnetised the players to return whenever it was up on our Amiga stand at the Commodore Show. The most unlikely shoot-'em-up fans clearly felt its alternative challenge.

ZOOM

sampled effects and synth music, most of which is exceptionally expertly created. One odd aspect that crops up now and again is the way you can totally surround

I can see that Zoom will be popular with anyone who likes the classic games. It undeniably has that magic addictiveness that those games possess. Zoom is a very good example of its type, so give it a go if you like the sound of it. Recommended.

B.V.

Graphics: 7
Sound: 8
Playability: 7
Value: 7
Price: £19.95

KIND

Yet another graphic word-processor is launched. Peter Lee offers some views – kind and otherwise – on this interesting newcomer.

Some software houses aim for the moon – and miss. Others confine their range to more down-to-earth proportions. KindWords, I am happy to say, falls into the latter category. It is a graphic word-processor from The Disc Company which aims to complete in the same marketplace as a number of very similar products, ProWrite and VizaWrite are probably the best known and do contain more features and there is Excellence to come. But despite its mid-range price, KindWords is a stylish and uncluttered tool and one with which I felt instantly at ease. Simple and elegant, while it has its bad points, it also has a lot going for it. Ease of use for starters and fewer of the over-rated additions of the more up-market competiton.

KindWords comes on two unprotected disks – one for the program, the other containing a 90,000 word dictionary and a small selection of special fonts, which are a major advantage. Because instead of sitting idly by and taking advantage of the standard Amiga fonts, the programmers have designed a new high-quality style which has been customised to allow even the humblest dot matrix printer to dump text in something approaching near letter quality. The range is limited and has to be specially loaded from disk before printing, but the output is very good. A lot of thought has gone into the characters' design and the finished article reproduced well on my Epson RX and would probably do better on more sophisticated printers. But the dump is very, very slow: we are talking real snail's pace here . . . Apart from super and sub-script variations, there is unfortunately only one face of this so-called SuperFont – Roman – and it comes in 8, 12 and 14 pt sizes. But there is an additional bonus in being able, at the click of a menu item, to have graphic border characters under keys, together with foreign accents and odd characters – things such as musical notation, arrows and copyright symbols.

As far as I could see there is no easy way of importing other fonts into an active document. You get what you are

'If you need to amend a word, the program uses the correct font automatically'

given, so KindWords makes few pretentions at desktop publishing. As I said earlier, it has aimed at a smaller target than its rivals – and in my opinion hit the bullseye. Where is scores over is in the friendly way graphics can be imported into documents. It will try to accommodate up to 16 colours if you ask it, working with art screens, typically DuluxePaint, in medium or low resolution; high resolution pictures may be loaded but they will be automatically reduced to med res. The program display is always in this resolution (640×200 pixels), which gives a clear and sharp work area, allowing for good image dumping to the printer. Users with colour printers have the luxury of multi-coloured fonts as well as multi-coloured images.

Once loaded, graphics can be edited in a number of interesting ways. Unfortunately the old problem of not being allowed to flow text alongside an image rears its head again. I do not consider any graphic word-procesor which prevents text being written alongside an illustration to be wholly adequate. It is like buying a car without a reverse gear. Pet moan over – and to be more positive, the graphic manipulation works well; once the image (possibly a paint 'brush' or even full-screen image) is imported into the document, clicking on its displays a line box surrounding it. There are eight selection ponts on the outline which allow you to crop unwanted portions of the artwork, move it along the width of the line and, more impressively, to re-size it.

This can be done manually, or proportionately by pressing the shift key at the same time as the box is edited, giving equal horizontal and vertical movement. Converting the image resolution and colours after loading can take upwards of a minute and if you manage to deform it out of all recognition, you may have to load it again. As always, chip memory is in big demand, so although the program will work on any Amiga with a minium 512K, at least 1 meg is needed to reach full potential.

I encountered a problem, though, when I loaded in a 16 colour digitised

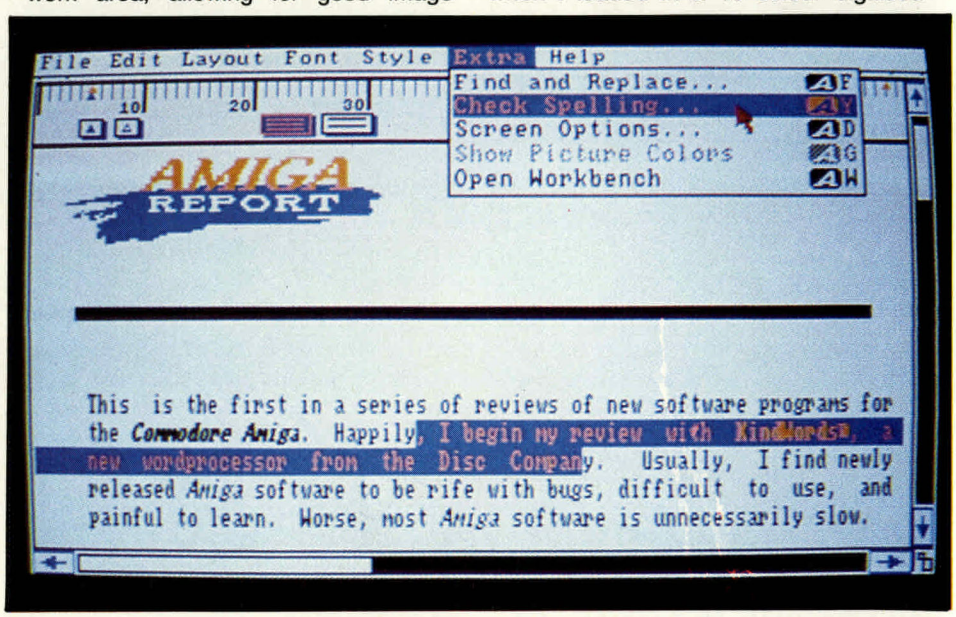


image. It was displayed perfectly but some portions printed out white when they should have been dark. It would seem that KindWords sees the second pallete colour as transparent. Once aware of this I was able to modify the pictures so as not to use this colour. When suitably modified the printed images were some of the most pleasing dumps I had ever seen.

Inserting and editing text is simple and the mouse cursor can be used to define whole batches of text for possible cutting, copying or moving. In this way different fonts for an already written segment can be chosen after the text is hilighted. If you need to amend a word, the program uses the correct font automatically.

Above the by-now common graphic display of page format icons which all similar programs have, KindWords displays its ruler on which icons can be slid to control margins, tabs and paragraph indents. There is also a helpful short-cut ruler format requestor box in which you can enter numerically all the document's parameters. All this information is subsequently saved along with your document, though you can specify a simple ASCII file save, which leaves out the graphics and saves raw text.

Attention to detail, evident in the fonts, is also appareant in the care given to printer drivers. At last programmers have realised that simply because Commodore put things on the Workbench disk, it does not mean they are beyond improvement. So KindWords have designed their own custom-drivers for a selection of supported printers – CBM_MPS 1000, Epson (standard and 24 pin and the JX-80), Imagewriter and Okimate_20. All other Preferences printers are still supported except for Diablo C–150, HP Laserjet and Okidata 92 and 292 and, in addition, there are 11 non-Preferences printers accommodated with specialist drivers available from addresses listed in the manual. I can only speak for the Epson dump, which was quite outstanding, even by Amiga proportions.

Also very friendly is the program's help function which features a quick reminder of the icon functions and a more explicit facility which displays the many keyboard shortcuts which help you move your work along at a good pace. In fact it appears every menu option is echoed by a keyboard command, so you need not take your busy fingers off the keys to push the mouse around.

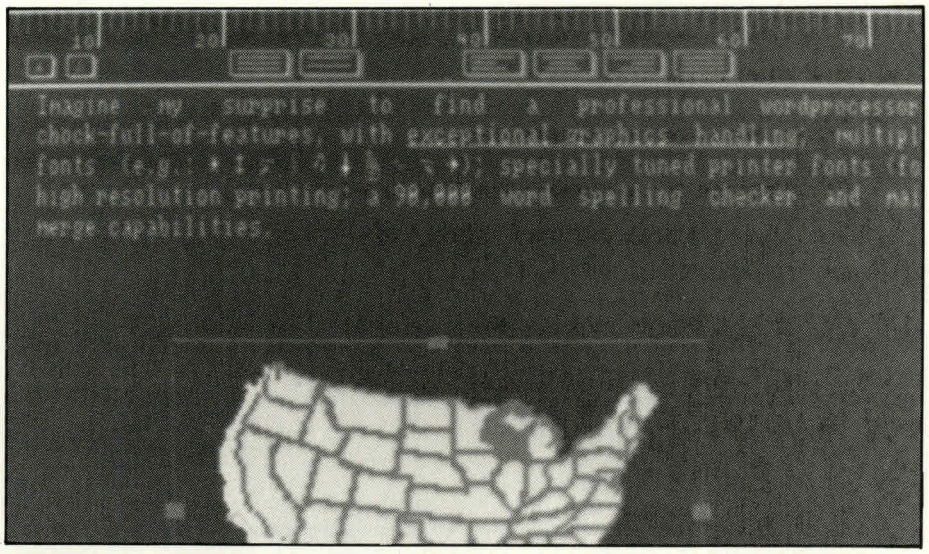
KindWords holds it own in the field of document attributes – allowing headers and footers, insertion of current date and time and giving a visual display of tabs and page-breaks if needed. Search and replace is well controled from a window and, provided you have sufficient memory, the dictionary can be loaded into RAM to speed up operations. A user-definable supplementary dictionary list is also available for 'learnt' words and this can be edited from within the program provided you keep your words in alphabetical order and you save it as ASCII. If the checker throws up an unknown word, among several options is a suggestions box which will bring up a number of words which the unknown one may possibly be.

Finally, the program also boasts a mail merge utility for sending multiple copies of the same document to different people, whose names, addresses and so on are retrieved automatically from a master list in database fashion. Creating this list is slightly cumbersome in that specific rules have to be followed – for instance you cannot simply write a comma, you must press the return key simultaneously with the comma key. But for all that, the small amount of time needed to create a merge list will be worth it if it saves you having to write different addresses over and over again. Grin and bear it really – it will save you time in the long term.

CONCLUSION

KindWords is a program w tten with care – everything about it shows consideration for the user. It does not claim to revolutionise the DTP market nor set the business community alight. It lays its stall out as a perfectly reasonable work tool and comes up with the goods. On the minus side, like most of its competitors, it takes the easy way out by not allowing text alongside artwork. However, it does compensate by having super custom drivers and specialised fonts for some printers – but having only one typeface means, it is graphic word-processing at its bearest. If you have your mind set on a graphic word-processor and can live with the shortcomings, have a look at this one. It may not be as powerful as some but it is friendlier than most and works its heart out.

P.L.



WORDS

'The small amount of time needed to create a merge list will be worth it if it saves you having to write different addresses over and over again'

Price: £49.00
Contact: Amiga Centre Scotland, 4 Hart Street Lane, Edinburgh EH1 3RN. Tel: (031) 557 4242.

SHELL & TOOLKIT

Metacomco, creators of AmigaDos, are also well known for their Amiga utilities. Bill Donald re-examines two of their older but still popular packages

METACOMCO SHELL

I last reviewed the Metacomco SHELL in the February 1987 issue of AUI and the new release of this product prompted me for a fresh look. A 'shell' in this context really means an environment or interface to the user. The AMIGA has two basic environments for the user – the CLI and the WORKBENCH. The Metacomco SHELL is designed for use in the CLI.

Running SHELL causes the appearance of a conventional CLI with the exception that the top left-hand corner displays the current directory. By default, this always starts in the root directory of df0: and apparently cannot be changed by the user.

The commands provided by SHELL are:

Alias	CD
Equ	Esc
Help	History
Key	Nonres
Path	Pop
Push	Resident
Set	

Some of these commands are duplicates of v1.2 AmigaDOS – for example PATH and CD. In addition, the Metacomco SHELL provides direct editing of a command line.

Probably the most useful feature of SHELL is the ability to customise this to the individual system. When SHELL is first called, the software looks on drive df0; for a file named ".PROFILE". This is an ASCII file which can contain a series of commands from SHELL. For example, the file listed below is my own personal ".PROFILE" batch file.

```
History 50
alias hi History
alias ec EndCLI
alias run c:ShellRun
alias  EndCLI  C:Endhsell
alias ass Assign
alias av Avail
alias cp Copy
alias cx CXRef
alias da Date
alias dc DirCmp
alias de Delete
alias di Diff3
alias ex Execute
alias fmt Format
alias gr Grep
alias inf Info
alias li List
alias ls Dir
alias mk MakeDir
alias nc Shell
alias rb Reboot
alias ren Rename
alias sdb Metascope
alias st Stack
alias ss Status
alias ver Version
key 1 dir
key 2 li   m
key 3 cp
key 4 del
key 5 #?#
key 6 md
key 7 ren
key 8 cd/^m
key 9 run wp^m
key 10 dir^m
path dh0:applications/wp/
prompt "%N%N>"
cd ram:
```

The first line contains the HISTORY command. This allows you to recall previous command lines by pressing the <cursor up> key. The numeric parameter defines how far you can go back to earlier command line sequences. The following 24 lines use the ALIAS function. This should be self-explanatory and permits the redefinition of the command lines which I use most often. Ah ha, you cry – why not use the AmigaDOS RENAME command? The answer is you cannot rename files assigned by the system or yourself. Even ASSIGN cannot be RENAMEd – try it if you do not belive me. However, ALIAS allows you to do this and consequently cut down on your keyboard strokes. Once the files have been given aliases, the alias names may be used in further batch command files.

The next 10 lines demonstrate the use of the function keys from the CLI. Note how I have started using aliases – I am a great believer in cutting down my typing ! Those lines which are terminated with the characters <^ m> have a special purpose. This character sequence (CTRL-M) informs AmigaDOS to append a carriage return.

The PATH line means that I can call up WordPerfect from any CLI irrespective of my current directory. Useful when I want to quickly look into a file. The PROMPT line gives me a CLI prompt which looks like this:

1.43>

The first number informs of the CLI number. Thus, if I spawn a new CLI then the prompt on the window will look like this:

2.1>

This example also conveniently explains the function of the second number to the right-hand side of the period. This is the total number of previous command executed from this particular CLI.

An extension of ALIAS is the SET and EQU commands. These permit the use of variables within your command line. The drawback to ALIAS is that it must be the first component on the command line. Using SET allows the placement of an aliased sequence anywhere on the command line. EQU allows you to incorporate an alias that was defined using SET into a new definition. This means that very long command line sequences can be considerably shortened. For example, consider where we keep our letters in directory "dh0:applications/wp/letters". The command line:

```
equ let push dh0:applications/wp/letters
```

means that using the command line:

```
$let
```

will take us into this directory and save the directory we have just left. Note the use of the dollar ($) sign to prefix the alias and PUSH which is explained below. The ESC command allows you to change the dollar ($) sign for SET and EQU to another keyboard character. I usually change this from "$" to the equals (=) sign, since the dollar character means pressing the shift to access it. I told you I was always on the look out for shortening key strokes!

POP and PUSH are very useful for jumping from directories. For example, you are in a directory named "wombat" on your hard disk and you want to move to drive of df2: into the directory named "foo".

```
push dh2:foo
```

Project D disc copier

Most copiers on the Amiga will only copy Amiga discs but Project D is unique in that it will also copy Atari ST, MS-DOS, Archimedes, Xenix and CP/M format discs. In fact it is probably the best copier for the ST or Archimedes. It's also very good at copying Amiga discs too (of course) and there will be updates available for future software releases. Project D also includes a disc editor that lets you edit raw disc tracks. The ultimate Amiga disc copier.

£35

Timesaver

There have been clock cards for the Amiga before, but Timesaver is the definitive word in clocks. The Timesaver is a board that plugs in between the keyboard and the computer on the A1000 only, and as such it takes up NO desk space, is compatible with ALL Amiga software & hardware, is instantly available on power up, uses NO Amiga RAM etc . . .
Not only do you have a built in battery backed clock, but you also have 7K of battery packed macro key definitions plus pre-defined ROM based macros. Timesaver will also save the last 1K of CLI commands for editing, etc . . . The only criticism with it is it won't work with the A500/A2000 (yet?).

£60

MPC SOFTWARE
72 Julian Road,
West Bridgford, Nottm NG2 5AN.
Tel: (0602) 820106/455114

"The definitive Pascal compiler for the Amiga"

– SOURCE: AMIGA USER

METACOMCO PASCAL NEW VERSION 2!

Metacomco, the authors of AmigaDOS, announce the release of version 2 of their unique single pass Pascal compiler. It is the most powerful and useful ISO Pascal on the Amiga with the friendliness and ease-of-use of a Turbo Pascal type environment.

The new manual even includes a section covering conversion of Turbo Pascal programs to Metacomco Pascal.

Ideal for beginners and experienced programmers. **£89.95**

Other extra features in the new release (which are optional extensions to the ISO standard) include:
■ Dynamic strings ■ Separate compilation and conditional compilation ■ Single and double precision floating point ■ Full 32-bit pointers ■ Bitwise integer operations ■ Enhanced I/O error handling ■ Sequential and random access files ■ OTHERWISE in CASE statements ■ Complete access to the graphics and sound capabilities of the Amiga, with extensive examples ■ Includes linker and MAKE utility ■ Extensively rewritten 330 page manual.

METACOMCO

26 Portland Square, Bristol BS2 8RZ, UK.
Telephone (0272) 428781
Fax (0272) 428618 Telex 444874 METACO G

See your local dealer or order direct from Metacomco. Prices include VAT and P&P for UK mainland. Add £6 for delivery outside UK. Registered users of previous versions can upgrade by sending original diskette plus £38.50 direct to Metacomco.

© METACOMCO 1988 Amiga is a trademark of Commodore-Amiga Inc. Turbo Pascal is a trademark of Borland International.

AMIGA MEMORY & HARD DRIVES

ADDED MEMORY

1000/500 owners, we can now offer you the Zero Wait State SPIRIT internal expansion memory boards in FAST MEMORY with battery back-up/clock. Selectable autoconfigure or non-autoconfigure. No soldering and includes full instructions, diagrams and pictures on disc! Prices start as low as £185 but due to the volatile price of DRAM chips at present, contact us for a firm price. Send S.A.E. for demo disk and technical spec. Programs requiring 1 meg memory are out now and it won't be long before 1.5 or 2 meg will be the normal. This board allows you to populate it in 512K increments, and you can still expand to a whopping 10 megs!

HARD DRIVES

Where can you get a 20 meg hard drive for £499.95? or 40 megs for £750? Better still, a 65 meg hard drive for only £895? From us of course. These are true SCSI drives with the interface allowing up to 7 devices on it, with a full year's warranty. These are very affordable drives and due to the AMIGA being a memory hungry beast we recommend at least the 40 meg drive or even the 65 meg drive. (150 megs on special order for £1,325).

BACK-UP-UTILITIES

We have the latest in hard drive back-up/utility programs. It allows you to specify which directory or pathway to back-up, 'wild card' matches or by creation date. Saves needless back-ups of data that hasn't been altered. Works with dual floppies as well! Double buffered for lightning copies. There are many her facilities but at £49.95 it is a bargain.

ACCESS VISA

BYTES & PIECES
37 Cecil Street, Lytham, Lancs, FY8 5NN.
S.A.E. for full prices and technical specification.
"We give support after a sale – we don't forget our customers!"
Please add £3 p&p/Insurance for memory boards and drives.

TRIANGLE TELEVISION

THE AMIGA GRAPHICS AND SOUND SPECIALISTS

IMAGINE and Amiga dealer that knows so much about Amiga graphics, that even BBC's "Micro File" asked for their advice. IMAGINE an Amiga dealer that always gives detailed demonstrations and then checks all systems before they leave the premises. IMAGINE an Amiga dealer that will continue giving helpful advice even after you've handed over your money. UNIMAGINABLE? THEN IMAGINE TRIANGLE TV – THE UNUSUAL AMIGA DEALER.

HARDWARE
Amiga 2000's, Amiga 500's, Memory Expansion, Hard Discs fitted, Genlocks, RGB – Video Encoders

★ NEW FLIGHTCASES ★
(in rigidised grey aluminium)
DIGITIZERS, TRAINING IN ANIMATION AND GRAPHICS, LEASING AND FINANCE

IN STOCK
Aegis Images, Deluxe Paint (full screen), DigiPaint (4096 colours), Deluxe Video 2, Aegis Animator, *New Aegis 3D Videoscape, *New Sculpt 3D, *New Animate 3D, *New The Director, *New Pageflipper, TV Text, *New TV Show, Pro Video, *New Aegis Video Titler, Digiview (PAL), Marauder, Deluxe Print, Deluxe Music, Instant Music, Pagesetter/Laser Script, City Desk DTP.
★ NEW FULL COLOUR FRAMEGRAPPER ★

TRIANGLE TELEVISION (Computers)
130 Brookwood Road, Southfields, London SW18 5DD
Tel: 01-874 3418. Fax: 01-877 1029
Mail Order Available

TRIANGLE TELEVISION

THE AMIGA MUSIC AND MIDI SPECIALISTS

NEW PRODUCT NEWS DR.T MUSIC SOFTWARE

Introducing Midifile compatible software for the A500/2000. These new products from DR.T are the most powerful music digital recording systems for the Amiga to date.
"THESE ARE THE TRUE DIGITAL WORKSTATIONS"

DR.T KCS 1.6
A 48 track digital recorder with M.P.E. Capable of real/step time editing. Cut, paste and copy functions. Transpose and quantise. Tempo changes and much, much more.

DR.T KCS Level 2
Another 48 track sequencer with M.P.E. plus a programmable variations generator and master editor. Programme variations of recorded tracks (up to 7 variations/tracks) to suit different styles of music. Also other music software in stock.

★ M.P.E. ★
DR.T. KCS 1.6 and Level 2, carry a Multiple Programme Environment. This will allow you to run up to 4 programmes at once and to edit accordingly in real time.
DR.T. Editors
Edits sound from your instruments and saves them. Yamaha, Roland, Ensonique etc.
★ MIDI ★
Midi interfaces for the A500/2000 are now available.

★ MORE MIDI ★
Courses in midi and music software (ring for details). All products are now on our demonstration music video. Costs £9.95.

TRIANGLE TELEVISION
130 Brookwood Road, Southfields, London SW18 5DD.
Tel: 01-877 1726/874 3418. Fax: 01-877 1029
Demonstration available — ring Colin **(Finance on complete systems)**

SHELL & TOOLKIT

will take you there but SHELL will also remember the name of the directory you came from. Thus to return to directory "dh0:wombat" you would enter:

pop

PUSH and POP utilise a stack mechanism whereby each visited directory be saved. By prefixing your command with PUSH rather than CD you can invoke this feature quite readily. Alternatively, you could always ALIAS the CD command to PUSH to save yourself the problem of remembering.

SHELL is supplied with a 106 page indexed manual. The usual terse house-style of Metacomco documentation is to the fore and the chosen examples are not particularly inspiring. My only complaint about this product was that resizing the CLI clears the screen and moves the cursor to the home position. This destroys the window contents and can be extremely tedious if you are just increasing the length of the window.

METACOMCO TOOLKIT

This is a companion to the Metacomco SHELL and once more is CLI-orientated software. The primary difference between TOOLKIT and SHELL is that the latter is purely a collection of new or enhanced AmigaDOS commands. In contrast, TOOLKIT provides a collection of both AmigaDOS commands and programming utilities. Thus the two products are complimentary to each other and can be used independently.

The AmigaDOS commands provided by TOOLKIT are:

Alib	Browse	Disasm
Enlarge	Make	Mount
Pack	Touch	Unpack

The utilities provided by TOOLKIT are:

Pipes Aux CLI

Some of these commands are used in conjunction with each other, so I will describe their usage accordingly.

The first two are PACK and UNPACK. These will compress an ASCII text file up to 30% of the original file size. There is a cost overhead of 1K per file using PACK and the documentation recommends that the file size should be a minimum of 2K to be a worthwhile candiate for compression. I tested PACK on a file of 94K and this was reduced to 51K, thus giving the figures supplied by Metacomco some credence. The only drawbacks to using PACK and UNPACK was that I did have an occasional failure to correctly decompress a file. Although the fault lay in one of the commands, it was impossible to discover which one. The other problem with these two is that they do require a large workspace in RAM, the default being a rather exorbitant 100K. Be careful when running tight on memory resources, you could end up with a mangled file.

The ENLARGE command is used to translate text strings into large characters for display at the CLI. I could not think of any obvious uses, other than to display rather crude warning messages when executing batch command files. I guess they just threw this one in to make up the numbers.

BROWSE is a more useful command since it allows you to skim through the contents of an ASCIII text file. There is a certain amount of context searching available. However, you cannot perform any replacement of text. The basic display is screen-orientated and is quite slow. For example: BLITZ, which is available from the public doman, demonstrates how to utilise the Blitter and page through a document extremely quickly.

ALIB and DISASM are also very useful and should be a part of every programmer's armoury. The former is used to extract or amend an Amiga library. Obviously some detailed knowledge of the system software and its structures is needed in order to gain full advantage of ALIB. By contrast, DISASM is something that most programmers will be able to explore very quickly. This command will disassemble an AmigaDOS executable or object file into an ASCII text file. In common with PACK and UNPACK, this command also demands a large workspace. In this case it is a very extravagant 200K. Note that these figures are the default size and thus can be reduced. However, I tend to think that if these commands are defaulted to such large values, something seems a little wrong in the original code and a little optimisation would not go amiss.

The output from DISASM does not include labels or other symbolic information – it is divided into either code or data sections, thus limiting its usefulness.

MOUNT allows you to "mount" a device onto your system. In other words make it recognisable to AmigaDOS. The command takes its instructions from an ASCII text file named "mountlist" which contains details of the device itself. Unfortunately, the supplied "mountlist" file was incorrect and I checked with an earlier version of the TOOLKIT and it seems the error has been repeated. The fault lies in the definition for a 5.25-inch drive. The flag parameter should read 1 and not 0. A slapped wrist to Metacomco for not spotting and correcting this mistake.

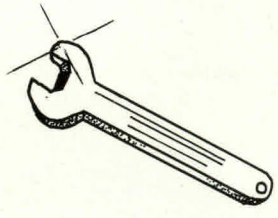
MOUNT is also used for the two supplied devices, namely PIPE and AUX-CLI. Happily, these do function correctly and many users will find the PIPE device very useful. Pipes are a concept which are heavily used in UNIX to communicate I/O between tasks. The pipe is only in existence for the duration of the data transfer which mean that you do not have to specifically create files. Most books on UNIX programming give many examples of how to use pipes. AUX-CLI is a console-handler which is similar to but not the same as, the CON: device. In the case of AUX-CLI the I/O is sent to the serial port rather than to the screen. Theoretically useful for remote debugging from another machine, but the whole idea is based on the assumption that the serial port is still functional – during a bad system crash this seems unlikely.

MAKE and TOUCH are two further UNIX utilities grafted onto AmigaDOS and should prove their worthiness to heavy-duty programming projects. In essence, the idea of MAKE is to keep track of files which have been modified through the medium of the file date stamp. MAKE provides a quasi-macro language and set of rules while TOUCH performs the actual date stamping. We hope to have an article on MAKE and its uses in a later issue of AUI.

The Metacomco TOOLKIT is useful but has failed to keep pace with what is available in the market. In some cases, the public domain offers users a good choice of programming tools. For example, the equivalents of BROWSE, DISASM, MAKE and PACK can be found on the FISH disks. My suggestions to Metacomco to stand off this competition would be as follows:

Use the Blitter for BROWSE. DISASM should disassemble 68010 and 68020 code. An intuition front-end on MAKE for beginners. A more effective compression algorithm and more options for PACK. Combine TOOLKIT and SHELL as one product.

B.D.



Prices: SHELL £49.95 – TOOLKIT £39.95

Contact: Metacomco, 26 Portland Square, Bristol BSR 8R2. (0272) 428781.

AMIGA USER INTERNATIONAL

Incorporating Commodore Business Magazine

AUGUST 1988

£1.95

CANADA $4.95

PERFECT SOUND

DISK 2 DISK
TURBO SILVER
NEURAL CONNECTION

ZOOM
STAR FLEET I

SUBSCRIBE!

You can keep up to date with everything that's happening on the AMIGA scene by taking out a subscription to Commodore AMIGA User International.
This new and unique international magazine is now published every month and will be mailed to you direct. Simply fill out the coupon for this special introductory offer, and send it to us now.

To: Subscriptions Manager, AMIGA User International
40 Bowling Green Lane, London EC1R 0NE. Tel: 01-278 0333 Telex: 267247 FINSEC

Please send me 12 issues of AMIGA User International

☐ Subscription rate U.K. £23.00
☐ Europe £32.00
☐ Outside Europe £46.00 Airmail

☐ Cheque enclosed
☐ Please debit my Access Card No.

Expiry date Signature

Date subscription to commence

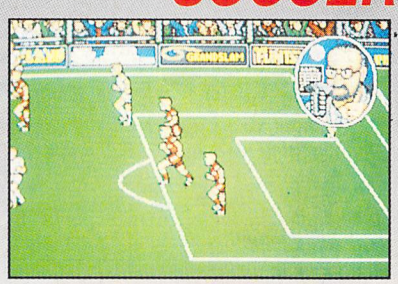
Name

Address Postcode

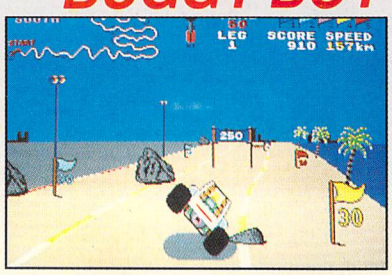
County (business)

Telephone (home)

PETER BEARDSLEY'S SOCCER



BUGGY BOY



EXCELLENT KIND WORDS

Only the Amiga makes it possible!

Top Down

VYPER

Now this is what I call an all-action game! In essence, Vyper is really a souped up new version of that all time classic, Galaxians but what it lacks in originality, it more than makes up for with excellent animation, superb sound and a verve that knocks spots off most other Amiga games.

A one or two player game, Vyper offers no less than 25 different alien types (the Yarks) coming at you in 100 varying waves. One of the joys of this game is that you can elect to start with any of the first 80 waves. Progress beyond the 80th swarm can only be accomplished by your own skills.

You start with three Vyper space fighters: once they are wiped out, the game is over. A bonus Vyper is awarded for every third wave that you survive. Your ship can only move left and right along the bottom of the screen and its sole weaponry is a single-shot cannon. Control is by joystick or keyboard.

An initial options screen shows you all the Yarks in glorious animation (but not their full range of colours – you will see those when you start fighting) and lets you select your starting wave, have a one or two player game or view the high-score board (the top 80 players). In a two player game, each player

takes it in turn to control a Vyper – there is no simultaneous play. Do nothing at the options screen and the game will eventually take off into a demo mode, just to let you see what you are up against.

The game is played against a black background liberally sprinkled with multi-coloured stars that scroll swiftly and smoothly down the screen. Over to the right of the display, a panel supplies such information as wave number, score, ships remaining and a handy reminder of the pause, toggle sound and quit wave commands.

Each wave of aliens swoops on to the scene in a different manner and varied flying formation – and by heavens, do these fellas move! On some of the waves, you will barely believe your eyes at the speed of the Yarks as they swarm onto the screen to take up their initial attack positions.

The animation is the slickest I have ever seen on a game for the Amiga (the screen is updated 60 times a second) and the detail of the aliens is immaculate. The foes dip and dive, swoop and swirl in all manner and variety of clusters and positions – the effect in almost every case is thrilling and

stunning. Sometimes the screen is so teeming with life and movement that it is all too tempting just to sit back and feast your eyes as the Yarks rain down their red-tipped bombs and blow your ship to smithereens!

"The foes dip and dive, swoop and swirl in all manner and variety of clusters and positions – the effect in almost every case is thrilling and stunning"

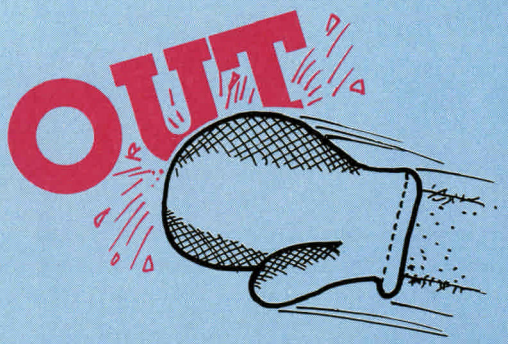
And that is not all. As well as being graphically brilliant, Vyper also comes out tops in the sound department, too. There is no music but there are bags of stereo sound effects, all first class and adding superbly to the already exciting atmosphere. Hook your Amiga up to a stereo system for the best effect.

Vyper is faultless and totally addictive. It may not have the most novel gameplay but, by golly, it comes up trumps in every other sphere. If you want great sound, brilliant animation, fast and furious action and a game that thoughtfully gives you the option to tackle almost any part of it in any order you wish, regardless of skill, then Vyper has got the lot. All gamesters should have at least one top-notch shoot-'em-up in their collection and for Amiga owners there can be no doubt what game that should be – Vyper. Go get it and get blasting!

B.C.

Graphics: 9
Sound: 9
Playability: 10
Value: 10
Price: £19.95

SECONDS OUT



Tynesoft

Once again, Tynesoft take us for a trip down Memory Lane with Seconds Out, another of those games that were so popular a few years ago. This time the source is Punch Out, a coin-op that was the inspiration for Frank Bruno's Boxing and Rocky, a couple of hits from a few years back.

You are Marco, a clean fighting boxer bearing a strange resemblance to Spike Milligan. Five opponents lie between you and the championship, each one harder than the last. You have a limited range of punches available, by raising or lowering your guard you can switch between head and body blows. Most of the game is spent pounding your opponent until the knockout icon flashes. This means your opponent is stunned enough for you to use the slow but powerful right hook to finish him off. Hit him with the hook enough times and he will go down, and with any luck will stay there.

Your fight is viewed from over your shoulders. So as not to obscure the other boxer, you are seen as a transparent wire-frame with a solid head and gloves. Although this works better than a solid body would, it still leaves you guessing as to what your opponent is doing, a problem made worse by the few frames of animation. Apart from Joe Weed, the first competitor, each boxer has a speciality move. These are not particularly entertaining but at least give the fighters their own characteristics.

"Waggling the stick massages your shoulders and perks you up with smelling salts and a drink"

Between rounds you take control of your trainer. Waggling the stick massages your shoulders and perks you up with smelling salts and a drink.

Even though the Amiga is quite capable of faithfully emulating (if not surpassing) Punch Out's graphics, those of Seconds Out are a lot worse. The characters have been poorly drawn and shaded, looking very blocky in places. There are very few sound effects to be heard, just a couple of biffs and the clang of the bell.

A problem that occurs frequently with boxing simulations is the limited range of moves. Just using the left or right body and head punches gives the fights a very repetitive nature. I found Seconds Out had little to entertain me, mainly because there is nothing particularly new on offer. Others may find its simple gameplay and humorous approach more appealing, though experienced gamers will demand greater involvement.

T.H.

Graphics: 5
Sound: 5
Playability: 5
Value: 5
Price: £19.95

GETTYSBURG: THE TURNING POINT *SSI*

On July 1st 1863, the Battle of Gettysburg began as little more than a minor skirmish. Two Union cavalry brigades who were checking enemy movements encountered a handful of Confederate infantry brigades who were looking for shoes at Gettysburg. By July 3rd, the battle had grown to monumental proportions, involving 90,000 Union soldiers against some 70,000 Confederate troops. In those fateful three days, around 50,000 Americans were killed.

Gettysburg: The Turning Point is the latest grand-tactical war game from Strategic Simulations Inc and concerns the most famous battle of the American Civil War. Using a refined version of their critically acclaimed system, SSI allow you to recreate this three day battle in 42 turns.

The game can be played by one or two players. In a one player game, the computer will take control of the other side – you can even let it control both sides if you simply wish to sit back and watch.

There are three game-style levels – basic, intermediate and advanced – and four scenarios – campaign game, first, second and third day scenario – to choose from. Other options include the hiding of unsighted units, setting a time limit, five difficulty levels and variable reinforcement arrivals.

Gettysburg is played out over a large, terrain-detailed, scrolling map. Unfortunately, the scrolling is still the usual jerky, flick-row sort employed by SSI – I wonder when they are going to catch up with the smooth-scrolling techniques that most other professional software houses use for the Amiga? Few spot sound effects are used – sampled explosions only, so far as I could tell.

Play follows the traditional method of dividing each game turn into phases, mainly operations and combat. In all, there are 14 separate phases in the intermediate and advanced levels of Gettysburg and include command control, recovery/rally and reinforcement phases.

Icons or bars may be used to represent the forces although icons are better as they show facing and mode (for example, cavalry – an optional extra that may not be historically accurate but makes for a more interesting game – may be mounted or dismounted). During each turn, the choices available to the player are presented by a myriad of labelled option 'buttons' which are operated by use of the mouse. In this respect, the game is very well designed and presented although it can be rather daunting at first encounter, so numerous are the choices and detail provided in this program.

When you access one of your units, you will be presented with a mass of information about that unit, including its name, number of men, morale rating, facing direction, co-ordinates of square occupied, whether plotted for melee, if and where firing and much more besides! You will certainly need to keep referencing the excellent large-paged manual that comes with the game until you have played a few times.

Gettysburg is probably the most detailed and involved strategy game that SSI have produced. For instance, combat is resolved right down to every individual soldier and the advanced game has some pretty intricate rules that will test the strategic skills of the most dedicated of wargamers. However, Gettysburg can be played at a basic level and is so brilliantly designed that even those new to strategy games should get to grips with it quickly.

This has to be one of SSI's best games yet. The wealth of options and well-designed player interface fronting the depth of detail, potential complexity and simulated realism make this a game that will challenge all grand-tactical gamesters.

B.C.

Graphics: 7
Sound: 3
Playability: 8
Value: 8
Price: £24.99

QUAD

Finding gadgets less than intuitive? Giulio Zicchi puts you on the right track.

This month we are going to take a brief look at gadgets on the Amiga. Gadgetsare the input devices used to communicate with an Intuition based application.

Most screens and many more windows will have gadgets attached to them – the depth arranging gadgets, for instance, or the window sizing gadget in the bottom right corner of most windows. These are the system gadgets which Intuition handles automatically. In addition to the system gadgets, we can set up structures within our program to provide further gadgets for our own input. Intuition currently supports four basic gadget types –

Boolean gadgets – ***are mainly used to gather yes/no or true/false selections.***

Proportional gadgets – ***are used to get or display proportional information from/to an application.***

String gadgets – ***are used to obtain a string of text from the user.***

Integer gadgets – ***are similar to string gadgets but allow only integer values to be entered.***

A certain amount of effort is required from the programmer before any of the above can be implemented, since they all require further structures to be set up in memory. However, the flexibility offered by them more than compensates for the niggly process of inserting the correct values in a few structures, as you will see.

This month's example sets up a proportional gadget in a window on the workbench screen and prints the current value in a hex number to the right of the gadget. I have kept the example as short as possible to prevent 'typingophobia' but it should illustrate the principles involved and give you incentive to develop further uses for these very flexible devices.

Turning now to the listing, you will notice that the window structure contains a **GADGETUP** flag in the **IDCMP** field and a pointer to the head of a gadget list, which in this case consists of one gadget.

The comments within the listing should help but more detailed information is to be found in the official Intuition manual. A proportional gadget has to have a structure attached called a PropInfo structure which holds further information regarding the range of values represented and along which axis the sliding part of the gadget may move.

The PropInfo flags in the example are set to **AUTOKNOB,** which says to Intuition, 'You provide the imagery for the sliding knob' and **FREEHORIZ** which allows the slider to be moved along the X axis. The vertical pot and body values are set to –1 since they are not applicable here. The horizontal pot value is set to 0 which will cause the slider to appear to the far left when the gadget first appears and the horizontal body value is set to $FFFF/32. This is just a convenient way of letting the assembler calculate the correct range of values represented by the gadget which is, in this case 0 – 31. The HPotRes variable is the value divided into the pot variable to obtain the current value of the gadget and is maintained by Intuition. All we, as the programmers, have to do is to monitor the values and take the appropriate action. The number display is presented in hex simply because it is easier than calculating decimal (cop out!!) and so I will leave that as an exercise for you to do. Also, try changing the body value and watch the displayed value change accordingly. That's all for this month – have fun with gadgets!

G.Z.

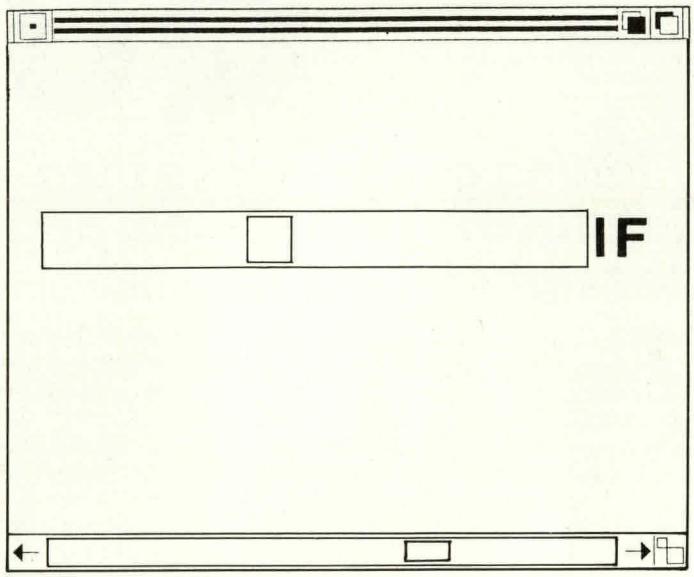
All of the 68000 assembly language articles in this series were written using the Devpac Amiga assembler from HiSoft. Consult your assembler manual to reconcile any differences.

```
          OPT     C-,D+
          INCDIR  "SYS:INCLUDE/"
          INCLUDE INTUITION/INTUITION.I
          INCLUDE INTUITION/INTUITION_LIB.I
          INCLUDE GRAPHICS/GRAPHICS_LIB.I
          INCLUDE EXEC/EXEC_LIB.I

NULL      EQU     0

          LEA     INTLIB,A1                 ; pointer to string
          MOVEQ   #$00,D0
          CALLEXEC        OPENLIBRARY       ; attempt to open library
          TST     D0                        ; successful ?
          BEQ     ERROR                     ; nope....
          MOVE.L  D0,_INTUITIONBASE         ; else store lib pointer
          LEA     GFXLIB,A1                 ; same for graphics lib.
          MOVEQ   #$00,D0
          CALLEXEC        OPENLIBRARY
          TST     D0
          BEQ     ERROR
          MOVE.L  D0,_GFXBASE               ; store lib pointer
```

QUAD




```
        LEA     NEW_WINDOW,A0           ; pointer to our window
        CALLINT         OPENWINDOW
        TST     D0                      ; window open ok ?
        BEQ     ERROR                   ; no - exit
        MOVE.L  D0,WDW_PTR              ; else store pointer
        MOVE.L  D0,A0                   ; get rastport pointer
        MOVE.L  WD_RPORT(A0),RASTPORT   ; and store

LOOP    MOVE.L  WDW_PTR,A0              ; main program loop
        MOVE.L  WD_USERPORT(A0),A0      ; get user port
        MOVE.B  MP_SIGBIT(A0),D1        ; and obtain signal bit
        MOVEQ   #$00,D0
        BSET    D1,D0                   ; set signal bit
        CALLEXEC        WAIT            ; and sleep....
        MOVE.L  WDW_PTR,A0              ; until message arrives
        MOVE.L  WD_USERPORT(A0),A0      ; then get message
        CALLEXEC        GETMSG
        TST.L   D0                      ; D0 should ALWAYS hold
        BEQ      LOOP                     ;  pointer  but  check
anyway
        MOVE.L  D0,A1                   ; to A1 for
        CALLEXEC        REPLYMSG        ; reply to message
        MOVE.L  (A0),A0                 ; retrieve message ptr.
        MOVE.L  IM_CLASS(A0),D0         ; determine message type
        CMP.L   #CLOSEWINDOW,D0         ; close gadget clicked ?
        BEQ     KILL_EVERYTHING         ; yes - close window
        CMP.L   #GADGETUP,D0            ; gadget hit ?
        BEQ     DO_GADGSTUFF            ; yes - do subroutine
        BRA     LOOP                    ; else loop

DO_GADGSTUFF
        MOVE.L   IM_IADDRESS(A0),A0        ;  get  address of hit
gadget


        MOVE.L    GG_SPECIALINFO(A0),A0      ;  get  proportional
structure
        MOVE.W  PI_HORIZPOT(A0),D1      ; these two variables
        MOVE.W  PI_HPOTRES(A0),D0       ; divided give current
        DIVU    D0,D1                   ; numerical position

        MOVE.B  D1,D0                   ; so we now need
        BSR     DO_HEX                  ; to convert the
        MOVE.B  D0,HEX_STRING+3         ; bottom four nybbles
        LSR.W   #4,D1                   ; of D1 into ASCII
        MOVE.B  D1,D0                   ; for the text routine
        BSR     DO_HEX
        MOVE.B  D0,HEX_STRING+2
        LSR.W   #4,D1
        MOVE.B  D1,D0
        BSR     DO_HEX
        MOVE.B  D0,HEX_STRING+1
        LSR.W   #4,D1
        MOVE.B  D1,D0
        BSR     DO_HEX
        MOVE.B  D0,HEX_STRING

        MOVE.L  RASTPORT,A1             ; rastport for gfx call
        MOVE.W  #200,D0                 ; X position in window
        MOVE.W  #29,D1                  ; Y position in window
        CALLGRAF        MOVE            ; move draw pen

        MOVE.L  RASTPORT,A1
        LEA     HEX_STRING,A0           ; pointer to string
        MOVE.W  #$04,D0                 ; number of letters
        CALLGRAF        TEXT            ; write to window Rport
        BRA     LOOP                    ; and loop

KILL_EVERYTHING
        MOVE.L  WDW_PTR,A0              ; window pointer
        CALLINT         CLOSEWINDOW     ; close ...
ERROR   RTS                             ; done !

DO_HEX  ANDI.B  #$0F,D0                 ; mask off nybble
        ADDI.B  #$30,D0                 ; add ASCII offset
        CMP.B   #$3A,D0                 ; 10 or greater ?
        BLT     HEX_DONE                ; no - branch
        ADD.B   #$07,D0                 ; else add further offset
HEX_DONE                                ; for hex letters
        RTS                             ; ok

NEW_WINDOW
        DC.W    0,0     ; window XY origin
        DC.W    250,47  ; width, height
        DC.B    0,1     ; detail and block pens
        DC.L    CLOSEWINDOW+GADGETUP    ; IDCMP flags
        DC.L    WINDOWDRAG+WINDOWDEPTH+WINDOWCLOSE      ; flags
        DC.L    GADGLIST1       ; first gadget in list
        DC.L    NULL    ; custom CHECKMARK imagery
        DC.L    TITLE   ; window title
        DC.L    NULL    ; custom screen pointer
        DC.L    NULL    ; custom bitmap POINTER
        DC.W    5,5     ; minimum width and height
        DC.W    640,200 ; maximum width and height
        DC.W    WBENCHSCREEN    ; destination screen
TITLE
        DC.B    'Gadgets !',0
        EVEN

GADGLIST1
GADGET1
        DC.L    NULL    ; next gadget
        DC.W    17,21   ; origin XY of hit box relative to window
TopLeft
        DC.W    171,10  ; hit box width, height
        DC.W    NULL    ; gadget flags
        DC.W    RELVERIFY       ; activation flags
        DC.W    PROPGADGET      ; gadget type flags
        DC.L    IMAGE1  ; gadget border or image to be rendered
        DC.L    NULL    ; alternate imagery for selection
        DC.L    NULL    ; first IntuiText structure
        DC.L    NULL    ; gadget mutual-exclude long word
        DC.L    GADGET1SINFO    ; SpecialInfo structure
        DC.W    NULL    ; user-definable data
        DC.L    NULL    ; pointer to user-definable data

GADGET1SINFO
        DC.W    AUTOKNOB+FREEHORIZ      ; PROPINFO flags
        DC.W    0,-1    ;horizontal, vertical pot values
        DC.W     ($FFFF/32),-1    ;  horizontal,   vertical  body
values

        The following variables are maintained by Intuition

        DC.W    0               ; container width
        DC.W    0               ; container height
        DC.W    0               ; HPotRes - X pot increments
        DC.W    0               ; VPotRes - Y pot increments
        DC.W    0               ; left border
        DC.W    0               ; top border


IMAGE1
        DC.W    152,0   ; X,Y origin
        DC.W    11,6    ; Image width, height
        DC.W    0       ; number of bitplanes
        DC.L    NULL    ; pointer to ImageData
        DC.B    $0000,$0000     ; PlanePick, PlaneOnOff
        DC.L    NULL    ; next Image structure


INTLIB          DC.B    "intuition.library",0
                EVEN

GFXLIB          DC.B    "graphics.library",0
                EVEN
_INTUITIONBASE  DC.L    0

_GFXBASE        DC.L    0

WDW_PTR         DC.L    0

RASTPORT        DC.L    0

HEX_STRING      DC.B    "FFFF",0
                EVEN
```

CUT PRICE SOFTWARE LTD

(FREE GAMES ★★ DISK ★★ WEEKEND BREAK VOUCHERS WITH EVERY ORDER)
(Blank 3.5in disks with labels only £10.95 per box of 10)

AMIGA GAMES	RRP	OUR
King of Chicago	£29.99	£19.99
Defender of the Crown	£29.99	£19.99
Sinbad	£29.99	£19.99
S.D.I.	£29.99	£19.99
Barbarian	£24.95	£16.95
Terrorpods	£24.95	£16.95
Obliterator	£24.95	£16.95
Deep Space	£34.95	£24.95
Backlash	£19.95	£13.95
Balance of Power	£24.95	£16.95
Crazy Cars	£24.95	£16.95
Dark Castle	£24.95	£16.95
Black Lamp	£19.95	£13.95
Grand Slam Tennis	£24.95	£16.95
Impact	£14.95	£9.95
Indoor Sports	£24.95	£16.95
Insanity Fight	£24.95	£16.95
Karate Kid II	£24.95	£16.95
Leviathon	£19.99	£13.99
Goldrunner 1 or 2	£24.95	£16.95
Shadowgate	£24.95	£16.95
Star Wars	£24.95	£16.95
Xenon	£19.95	£13.95
Leaderboard	£24.95	£16.95
Leaderboard Tournament	£9.99	£6.99
Destroyer	£24.95	£16.95
Flight Simulator	£45.95	£35.95
Hunt for Red October	£24.95	£16.95
Art of Chess	£24.95	£16.95
Terrormex	£19.95	£13.95
World Games	£24.99	£16.99
Winter Games	£24.99	£16.99
Hollywood Poker	£19.95	£13.95
Tetris	£19.95	£13.95
Diablo	£19.95	£13.95
Q Ball	£19.95	£13.95
Time Bandit	£19.95	£13.95

AMIGA ADVENTURES	RRP	OUR
Jixer	£24.95	£16.95
Guild of Thieves	£24.95	£16.95
The Pawn	£24.95	£16.95
Deja Vu	£29.95	£19.95
Leisure Suit Larry	£24.95	£16.95
Uninvited	£29.99	£19.99
Kings Quest Triple	£29.99	£19.99
Hitchhikers Guide	£29.99	£19.99
Leather Goddess	£29.99	£19.99
Plundered Hearts	£24.99	£16.99
Station Fall	£29.99	£19.99
Phantasie III	£24.99	£16.99
Jewels of Darkness	£19.95	£14.95
Silicon Dreams	£19.95	£14.95

AMIGA BUSINESS PRODUCTS	RRP	OUR
Superbase	£99.95	£69.95
VIP Professional	£228.85	£169.95
Word Perfect	£228.85	£169.95
Logistixs	£114.94	£79.95
Assembler	£69.95	£49.95
Drum Studio	£39.95	£29.95
Amiga File	£49.95	£34.95
Gismos	£49.95	£34.95
Lattice C	£189.95	£139.95
Pascal	£89.95	£69.95
Promise	£39.95	£29.95
Toolkit	£39.95	£29.95

AMIGA GAMES CONT.	RRP	OUR
Silent Service	£24.95	£16.95
Bubble Bobble	£24.95	£16.95
Mercenary	£24.95	£16.95
Road War 2000	£24.99	£16.99
Hardball	£24.99	£16.99
GFL Football	£24.99	£16.99
GFL Golf	£24.99	£16.99

(Business orders include VAT. Next day delivery £6.95. Recorded £2.50)
(Game Products Postage Free U.K. Mainland Only. Overseas Orders Add £1.00 per Disk. Air Mail £2.50 per disk. Price List available. Please send S.A.E.)
Cheques/Post Orders (Sterling only please). Made payable to:
Cut Price Software Ltd., Unit 6 (Dept. 1), Short House, Riverway, Harlow, Essex CM20 2DW.
24 hour Answerphone (0279) 24433 or (0279) 31956 (Visa or Access Orders welcome)

CUT PRICE SOFTWARE LTD

NATIONAL COMPUTER LIBRARY

ENQUIRIES WELCOME ON PERIPHERALS AND HARDWARE SALES AT LOW COMPETITIVE PRICES

Hire Software Before You Buy It

AMIGA TITLES NOW AVAILABLE

- NOW UNDER new management
- OVER 8,000 different titles available for hire for the COMMODORE, SPECTRUM, ELECTRON, BBC, AMSTRAD all models, ATARI, and MSX computers, **ATARI ST,** and now **CBM AMIGA.**
- ARCADE, ADVENTURE, EDUCATIONAL and BUSINESS software too.
- HIRE PRICES from only £1.00 INC. P&P.
- 20% DISCOUNT off all purchase software.
- LIFE MEMBERSHIP £6.00. Hire your first title FOC.
- FREE CATALOGUE.
- FAST RETURN OF POST SERVICE (if reserves are given).
- ALL GAMES manufactured ORIGINALS with full documentation.
- LARGE DISCOUNTS ON ALL PURCHASES for members.
- UP TO 65% OFF software, regular sales lists sent to all members.
- Full computerised system keeps track of your order. We pride ourselves in being the most professional Hire Library in the United Kingdom, with experienced staff who know what the word service means.
- NOW IBM SOFTWARE FOR SALE.

Send large S.A.E. now for free catalogue.

NATIONAL COMPUTER LIBRARY

1 Walkers Road. North Moons Moat. Redditch 139B 9HE 0527 510072

CCI Amiga

NAME .....

ADDRESS .....

.....

.....

COMPUTER MODEL .....

GAINSTAR LTD

AMIGA
DR. T. KCS 1.6
MT 32 EDITOR
DX711 EDITOR
DEMO DISKS
NOW AVAILABLE
DMCS AND
MUCH MORE

WTO
BEST PRICES

ATARI
STEINBERG PRO
24 v. III
DRT v 1.6 v. II
DX HEAVEN
D50 EDITORS,
ETC
CREATORS
MASTER SCORE

ALL PRODUCTS FULLY GUARANTEED

ATARI
AMIGA
IBM
MAC

PERSONAL SERVICE AND BACK-UP

SOFTWARE AVAILABLE

BUSINESS
ARTS PACKAGES
DESIGN
GRAPHICS

PHONE 0252-877431
NOW

DISKS
MIDI CABLES
MIDI INTERFACES
HOME TUITION
COMPUTER
HARDWARE

The U.K. Amiga User Group

Are you new to the Amiga, finding it difficult to harness the power of this amazing computer ?, then what you need is help from the largest group of Amiga enthusiasts in the world outside of the United States.

Members receive:

- Excellent discounts on software
- Technical support and on line help
- Superb hardware reductions
- A bi-monthly newsletter of over 60 pages!
- Access to a PD library of over 250 disks
- Use of an Amiga only bulletin board

DON'T HESITATE - JOIN NOW and start to appreciate what Amiga computing is all about.....

For further details *write, enclosing a stamped addressed envelope to:*

The U.K. Amiga User Group,
66, London Road,
Leicester. LE2 0QD.

Or Telephone - **Leicester (0533) 550993**

F–BASIC

A compiler system offering an alternative to AmigaBASIC ? Andy Eskelson puts it to the test.

As BASIC has emerged as the number one language for home micros, it is not surprising that there have been several attempts to improve the system. More memory and faster processors is one way to go but BASIC in its original form is inherently slow. This is NOT a fault but rather a consequence of the method of operation that BASIC uses. Stated simply it has to decode each line of commands every time it uses them, even if it has already executed the line before, such as in the body of a FOR – NEXT loop. This process is called interpretation and eats up processing time.

Interpretated BASIC has several very real advantages, the main ones are ease of use, simple editing systems, easy to debug, fast to write to name but a few. Surprisingly enough the code that BASIC produces is fairly compact but it has a major problem in that it has to have the BASIC interpreter active in order to run.

One way in which BASIC could be speeded up would be to get rid of the interpreter system and replace it with something else. One such technique is known as COMPILING and involves running a special program that converts the lines of commands into something that resembles machine-code. The resultant code is sometimes referred to as Pseudo-Code or P-Code for short. Once the program has been reduced to P-Code, a much simpler and very much faster system can be used to run the program.

F–BASIC is such a compiler system but it has a very interesting difference. Most compilers take the computer's standard BASIC as the input and compile that. This means that you can get the program running and debugged normally and then compile it to get the extra speed. F-BASIC does not use Amiga BASIC at all. It has its own BASIC dialect, which has several advantages. The programmers of the compiler can fine-tune the operation of the BASIC to be very easy and fast to compile. They can also impose strict rules as to how you can apply the functions. This means that they can produce a compiler that is very fast, especially when operated from the RAM: device.

F-BASIC claims to be the fastest BASIC compiler available, so fast in fact that it is as easy to develop programs with F–BASIC as it is with a standard BASIC interpreter. In practice I cannot dispute this at all. The compilation times are very short, a 40 line program compiles in a couple of seconds. There are many functions that you would expect from F-BASIC and quite a few that you would not. The most surprising is its ability to use the library and Kernal routines of the Amiga and to be able to call machine language routines. There is also a very nice high level interface to the graphics functions, so you do not have to mess about with library calls for most of the graphics.

> *"The compilation times are very short, a 40 line program compiles in a couple of seconds."*

F-BASIC comes on two disks, one contains demos and the other the compiler. It is recommended that for program development you use the RAM: device and instructions are given as to what files you need to copy across.

The handbook is a floppy A4 spiral bound apology for a manual. It is supposed to be an easy tutorial but it is rather badly set out and can be confusing. It sometimes assumes that you know how to use F-BASIC while at the same time it tries to explain a command as if you have not come across it before. Needless to say this can become very annoying. I often found myself having to re-read sections. There is a reasonable index and a quick reference guide but again it is not very well set out and the page numbering is in the chapters/page format ie 12.31 (chapter 12 page 31). The quick reference guide gives NO information on the syntax of each command. This seems strange as including the syntax in the guide would seem the minimum requirement as the commands are complex at times and to keep hunting through the manual is irritating.

F-BASIC uses long command names, similar to those found in many of the current Amiga languages. This increases the chances of syntax errors and are a real drag to type in. e.g COLOR PLOT nn (x,y) is the command to set a point (x,y) to the colour of colour register nn. It may make for nice readable programs but it took only two attempts to type color plot to have me swearing at the choice of name, WHY such a long name! PLOT would have been better! While on the subject of COLOR PLOT the nn parameter MUST be a number – it cannot be a variable. To set points to different colours you have to use the command COLOR PEN (f,b) to set the foreground and background colours and then use a slight variant of the COLOR PLOT command which is COLOR PLOT (x,y) to plot a point in the current foreground colour.

> *"how would you interpret 'Illegal Location for This Type of Declaration'??"*

There is a somewhat odd restriction with the FOR-NEXT loops . . . You cannot jump out of them for any reason, even if you want to call a subroutine and then return! Linear programming may be slightly faster but I hardly think that banning the use of subroutines from within FOR-NEXT loops will be very popular with programmers. There are plenty of other loop structures, WHILE ENDWHILE; REPEAT UNTIL there are two examples. I was unable to get a double condition working with the WHILE command, ie WHILE $x < 16$ OR $y < 4$, I tried bracketting the terms etc. but nothing seemed to work. I finally resorted to a couple of IF statements and a flag to get the effect that I wanted. I was not very pleased with some of the Error messages – how would you interpret 'Illegal Location for This Type of Declaration'?? Maybe you would have a hunt through the handbook . . . well there is an index of error messages. It says (13) Illegal Location . . . etc. Not very helpful. Most of the error messages are quite straightforward but some do need to be enlarged upon.

The demo disk contains many programs. These have to be compiled before they can be executed. They are mainly graphic and maths demos. As such they

continued on page 98

16 BIT CENTRE

HOME & BUSINESS COMPUTERS
HARDWARE

Supra 20mb Hard Drive	£649.00
Perfect Sound	£69.00
Micron 2mb Memory Expansion	£449.00
Amiga A500 Pack c/w Deluxe Paint, 3 Games + Modulator	£399.00
1084 Colour High Res Monitor Inc Lead	£229.00
Amiga A2000	£1,050.00
Amiga Business Pack, A500, 1084 Monitor, THE WORKS, PC Transformer, MPS 1200 Printer	£775.00
IMB Cumana Drive	£99.00
DigiView V2 Pal	£149.00
DigiView Adaptor	£18.50
Genlock	£260.00
Futuresound	£155.00
JCL Colour Digitiser	£299.00
16 Bit Centre Business Pack (Phone for details)	£449.00

SOFTWARE

A Drum	£32.50
Ageis Animater/Images	£75.50
Aegis Sonix	£39.50
Animatero	£99.00
Digipaint Pal	£42.50
Deluxe Paint II	£48.50
Deluxe Videop Pal	£48.50
Devpac	£48.50
Lattice C v4.0	£122.50
Pixmate	£45.00
Sculpt 3D	£59.00
Softwood Write + File	£72.50
TV Text	£72.50
VIP Pro	£99.00

16 BIT CENTRE
48 Bachelor Gardens, Harrogate,
North Yorkshire. HG1 3EE
Tel: (0423) 526322
All Prices include VAT & Postage

OFFICIAL COMMODORE/AMIGA DEALER

COMPUTERS

AMIGA BUSINESS SYSTEM: A500 + 1084 + MPS1200 + The Works! + Transformer PC Emulator	799.00
Amiga 2000 + 1084 Colour Monitor	1348.95
Amiga 2088 PC/XT Bridgeboard + 5.25" Drive	481.85
Amiga 500	369.00
Amiga 500 + Commodore 1084 Colour Mon	619.00
Amiga 500 + Philips 8833 Stereo Colour Mon	639.00

PRINTERS

Citizen 120D Parallel	149.95
Star LC-10 Parallel	199.00
Star LC-10 Parallel Colour	219.00
Star LC24-10 24 pin Multi-font 170/57cps	329.00
Okimate 20 Text & Multi-colour Graphics for Amiga	159.95
All Oki 20 consumables normally in stock	PHONE

MONITORS

Philips 8833 Stereo Colour Monitor inc lead	279.00
Philips 7502 Green Screen Monitor inc lead	85.00
Commodore 1084 Colour Monitor inc lead	259.00

MISCELLANEOUS

Amiga 2092 PC 20Mb Hard Disk Drive	493.35
Amiga 2052 2Mb RAM Card	366.85
Amiga 501 512K RAM/Clock Expansion	119.00
Cumana CAX354 Disk Drive	109.00
Surge Protector 13A Plug	12.95
Surge Protector 3-Way Adaptor	15.95
Amiga DOS Reference Manual	22.95
Addison Wesley Amiga Ref Manuals	PHONE
Genlock	269.00
Digipic Frame Capture Digitiser	319.00

SOFTWARE

Superbase Personal	79.00
Superbase Professional	187.00
Digiview 2 PAL	119.95
VizaWrite	79.00
Word Perfect	165.00
Lattice C standard	126.00

Prices subject to change without notice E&OE

All prices include VAT
CARRIAGE £8, EXPRESS DELIVERY £12, Software & Small Items FREE.

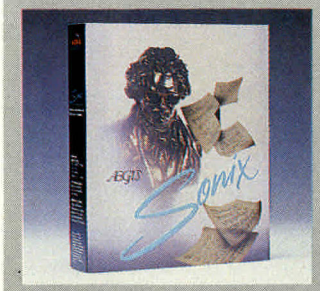
Delta Pi Software Ltd

8 Ruswarp Lane, WHITBY, N. Yorks. YO2 1ND.
Tel: 0947 600065 (9am-7pm)

AEGIS

Music

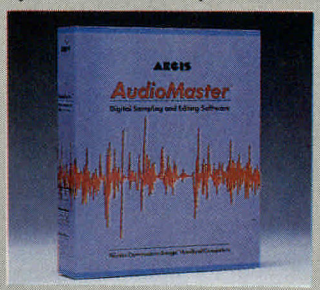
SONIX



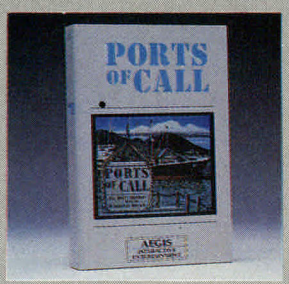
The ultimate music creation and control system. Enter notes on a staff; combine multiple instruments, sample sounds and Audio Master files and insert these in your score. Use pre-programmed instruments or create your own using the inbuilt synthesiser. Supports 8 MIDI voices with upto 32 channels and 16 MIDI patches per channel or 4 Amiga voices and 4 MIDI voices. For the hobbyist and the serious professional.

AUDIO MASTER

Use digitising hardware to load samples into Audio Master and alter sound, pitch, sample rate, volume, octave. Display waveforms, add special effects including echo, flange, reverse flange, low pass filtering. Save modified sounds as 5 octave Sonix instruments and use in your Sonix creations. Completely IFF and RFF compatible.



Entertainment



PORTS OF CALL

A game of skill and mental calculation that simulates the world of cargo shipping. Become an owner, a sea captain, take risks, manoeuvre your vessel in and out of well known ports, survive storms and compete against your friends to see who is the financial wizzard.

ARAZOK'S TOMB

Ace investigative reporter stumbles on an underground connection between magical future. Scottish countryside, ancient history, buried monoliths — an ancient city rebuilt in a futuristic sinister land of the supernatural, sinister and deedly....!!!!

Communication

DIGA!

The easy to understand communications package offering TTY, ANSI, Tektronic 4010/14, DEC VT100, and DEC VT52 (or write your own). Protocols include ASCII, XModem (+CRC), YModem (+CRC), Compuserve-B, Kermit and Doubletalk. Includes a scripting system for creating single step automatic log-on.

For your nearest dealer call:
HB Marketing Ltd Brooklyn House,
22 The Green, West Drayton,
Middlesex, UB7 7PQ

on: 0895 444433
FAX: 0895 441962
TLX: 934689 HBMK

HBM

STOCK

Tynesoft

Stock Market is not the last word in originality – indeed, I remember writing a version of such a game in BASIC for the Commodore PET many moons ago – but it is reasonably entertaining, if expensive, fare.

The game opens with an impressive title screen (the Houses of Parliament are undoubtedly more eye-catching than the Stock Exchange building) accompanied by a short snatch of "We're In The Money" played in big band style. This digitised snippet crops up from time to time during play.

Up to six players can take part in the game, each taking it in turns to play the market. You can play alone but the only one you have to beat is yourself since the computer does not take any competitive part in the proceedings. Each player can carry out whatever transactions he or she likes before ending the turn and passing play on to the next speculator.

During one turn, the player may buy, sell, visit the bank, check out his assets, see the top 15 score board or view a graph. For buying and selling purposes, a detailed but fairly uninspiring chart lists all the companies. Against every company is listed the price per share last turn, the current price, the net change, the number of shares available and, for each player, how many shares he owns, the cost of the original purchase and the amount of profit or loss made.

MARKET

Visiting the bank allows you to borrow or repay part or all of a loan, always at the current interest rate. Details of your bank statement are shown, again in chart form. You may wish to turn your volume control right down during a visit to the bank since the inbuilt speech synthesiser is used at this point.

The graph options shows how well or badly a particular stock is doing while the assets option provides an analysis of your present standing in the game. Pressing the E key ends your turn.

At the completion of a round, the program randomly generates the share movements and supplies a ticker tape of sundry events influencing

the market trends. At the end of ten rounds, the game is over and the program presents you with its verdict on your performance together and declares one of you the winner. High performing players are eligible for entry to the top 15 score board.

Stock Market is an enjoyable game but it could have been presented with a lot more flair than this version exhibits. The occasional pretty picture, the use of the inbuilt speech synthesiser and a snippet of digitised music do not add gloss to what is otherwise a lacklustre implementation of an entertaining game. For such a game as this, the asking price would have to be a good deal lower to tempt me into buying it.

B.C.

Graphics: 6
Sound: 4
Playability: 5
Value: 5
Price: £19.95

The great AMIGA Cover Up!

Keep your AMIGA protected with a strong, top quality, fire proofed cover. Specially designed for the AMIGA 1000, it has a neat mouse pocket to keep the control device safe, too. At only £15.95 (plus 50p p&p) its a great way to keep dust and dirt off your computer. When you're not using it cover your AMIGA up and keep it safe!

Only £16.45 inc P&P

To: Commodore Business and Amiga User
40 Bowling Green Lane, London EC1R 0NE
I want you to rush me a special AMIGA cover. I enclose a cheque (sterling) for £16.45 (add £1 for postage outside the U.K. and Ireland) made payable to 'Croftward Limited'
Name .....
Address .....
.....
.....
Access ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐
Signature .....

AMIGA 500 - THE GREAT COVER UP!

Your swish new Amiga 500 should not be subjected to the ordeal of C — coke, coffee, crumbs and crips — at least not while you are not using it! So the best thing to do is cover it up — keep it protected by an exclusively designed Amiga 500 cover. Each CCI Amiga 500 cover is tailor-made, to fit the machine. It has the official Amiga logo printed in full colour on the top and is specialy created to give complete protection against dust and other damaging substances. It is expertly sewn throughout, fully bound and manufactured from very high quality grey supported nylon material.

It has a special mouse pocket and the whole cover fits snugly over the complete Amiga 500 computer, giving it extra protection to help keep it in good working condition.

The Amiga 500 cover — only £7.99 inc. p&p.

ONLY £7.99 incl. P&P

BUY ONE NOW!!

Commodore Amiga User International
40 Bowling Green Lane, London EC1R 0NE
I enclose cheque/P.O. No.
for the amount shown above payable to 'Croftward Ltd' or please debit my ACCESS account No.

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Signature _____ Expiry date _____

Name _____

Address _____

_____

Telephone Number _____

Please allow 28 days for delivery.

WAVEFORM WORKSHOP

Phil Wilkes

The Amiga has many outstanding features, including its world-beating graphics, unique multitasking ability and quality software base. Equally high on the list of features is the Amiga's high quality stereo sound system. This article takes a look at how to use this from AmigaBasic and presents a utility program to help make the most of it.

Unlike the wide range of graphics commands, AmigaBasic contains only two commands related to the sound system. The SOUND command deals with actually playing notes, while the WAVE command determines the tone, or timbre, of these notes. Let us look at these in a little more depth.

SOUND

The SOUND command must be followed by two numbers. The first determines the frequency of a note to be sounded, that is how high or low it is. If you want to play music, your AmigaBasic manual gives a table to convert musical notes into frequency numbers.

The second number says how long the note is to last. Unlike frequency, where the number relates to a real world quantity (the frequency in Hertz), the length number uses an arbitrary unit system such that a number of 18.2 gives a length of one second! Again a table is given in the manual but as long as different note values relates to each other properly, the setting of this number is not too critical.

There are another two numbers which are not necessary but which give additional control of the SOUND command. These are volume, which can range from 0 to no sound up to 255 for the loudest sound. If not given, the volume is set at 128, just half way. The last number specifies on which of the Amiga's four sound channels the note is played. Channel 0 and 3 sound on the left of the stereo field and channels 1 and 2 sound on the right. If no channel is specified, channel 0 is used.

That is more or less all there is to the SOUND command. Just to give an example to make things clear:

SOUND 440,10,200,0

will play a note of 440 Hertz (which is A below middle C) for just over half a second at a fairly loud volume and on channel 0. Easy, isn't it!

WAVE

Using only the SOUND command will enable you to play completes tunes in four part harmony but all the notes would have the same tone. As you probably realise, real instruments have different tones, or timbres, to each other. It is largely this that makes a flute sound different from a trumpet, for instance.

The timbre of any instrument is defined by its waveform. If you were to examine a single musical note on an oscilloscope (or on the Amiga with a sound sampler), you would be able to see the shape of its waveform repeating across the screen. The WAVE command allows you to define the shape of a waveform for each channel, to give the sound more character.

The general form of the command is:

WAVE c%, TIMBRE%

where c% would equal the channel being defined and timbre% is the name of an integer array which defines the waveform. The array timbre% needs to contain 256 elements (0-255), each of which is set to between –128 and 127 to determine the height of the wave shape at that point. Not as straightforward as the SOUND command, is it!

The problem is that, unless you are an expert in acoustics, you will not know what a waveform will sound like. Trying endless combinations of numbers by trial and error until you get the effect you want is not my idea of fun!

But do not worry – help is at hand. Program 1 presented at the end of this article, entitled Waveform Workshop, allows you to see, hear, alter and test waveforms to your heart's content, all by just using the mouse. Having found a waveform you like, you can save it in a data file and then use it in one of your own programs by reloading it with program 2.

USING THE WORKSHOP

To use the program, simply type it into the AmigaBasic editor and save it in the usual way. If this is your first program, refer to your manual for how to do this.

When run, the program clears the screen, sets up a number of boxes at the bottom and generates and displays an initial waveform in a large black area in the upper half of the screen. A note is also played using this waveform.

Just below the waveform display is a line of boxes containing the letters A-G. This represents four octaves of musical notes (no sharps or flats). By moving the mouse pointer over any of these and pressing the left hand button, they may be played just like a keyboard. Each note will sound as long as the button is held down. In this way, you can play simple tunes and test the sound in different ranges.

This keyboard facility is really only intended to test the waveform which is currently displayed and so is fairly basic (no pun intended!). The real meat of the program is in the boxes at the bottom, each of which performs a different function on the waveform. Let us look at each in turn.

SQUARE Clicking on this box makes the current waveform a square wave. This sounds a little buzzy and quite wooden, like a bright clarinet.

SAWTOOTH Sets the waveform to a sawtooth wave, which is bright and brassy, like a trumpet.

PULSE This sets a pulse wave, which sounds quite thin and reedy, like an oboe.

TRIANGLE A triangle wave sounds mellow, like a flute.

In addition to these four preset waveforms, there are two options which generate different types of random waves each time they are selected.

RANDOM This type of wave is made by adding a random amount, positive or negative, to each preceding value. The results are usually quite bright and full.

NOISE Each point on the wave is just a random value, unrelated to any other. The results are usually quite buzzy.

All the options so far select a new type of waveform to work on. The next few options modify existing waveforms.

FILTER This option applies a smoothing algorhythm to the waveform. This reduces the higher pitched elements of the sound, making the tone less bright. For anyone familiar with synthesisers, it is very like the effect of a low pass filter. The smoothing takes a few seconds, so the program asks you to wait!

FILTER × 5 You can make large filter effects by clicking on the Filter box a few

times. However, it is easier to use this option which is like using Filter five times. So instead of sitting there clicking on Filter, you can go and make yourself a coffee!

LOUDER This option doubles the level of each point. If the waveform is quiet, this will increase its volume. If any points would have gone beyond the range of the display, they are limited to the maximum value. This introduces clipping distortion, which can be used creatively to brighten a dull sound.

CENTRE This has no actual effect on the sound but centres the waveform in the display. If for example a random waveform were drawn but it was all in the top half of the display, using Centre followed by Louder would increase the volume without distortion (if that is what you want!)

FOURIER This does not change the waveform but displays the harmonics which make up the sound. Any regular waveform is actually made up from simple tones called harmonics. The lowest of these has the same wavelength as the complex waveform, with other harmonics being at 2x, 3x, 4x the frequency, etc. The scale around the waveform display comes in quite useful here. The marks along the bottom indicate each harmonic and each mark vertically represents a volume of 20 units.

This option performs what is known as a fourier transform of the waveform to extract the harmonic values. Although not of direct use, it is interesting to see and may help your understanding of how sounds are made up. Note, for example, that the square and triangle waves are made up of odd harmonics only (every other value is zero) and that the upper harmonics are reduced following the filter option.

RESOUND This refefines the wave data and redisplays the waveform on the screen. It has two main uses. Firstly, it will redisplay the waveform after using Fourier. It is also used after a very special hidden feature – waveform drawing!

The waveform display actually responds to the mouse, enabling you to modify or totally redraw the waveform. However, the effects of any changes will not be heard until Resound is selected – do remember!

UNDO Very useful, this! If you preferred the previous waveform and want it back, click on this and your prayers will be answered!

SAVE This will prompt for a waveform name and then save the waveform data in a file on disk, so that it can be used in another program.

QUIT Leaves the program!

Using the Waveform Workshop, a library of useful waveforms can be assembled. To use them in your own programs, incorporate program 2 into them. This simply prompt for a waveform, reads it in off disk and then defines channel 0 accordingly. Feel free to amend this as you require.

I hope you enjoy Waveform Workshop as much as I have enjoyed developing it. If it leads you to experiment with different sounds in your own programs, my aim will be achieved. Happy music making!

Program 1

```
REM Waveform Workshop Program
REM by Phil Wilkes  June 1988

RANDOMIZE TIMER
DIM a(255),Timbre%(255),Backup%(255)
DIM harm(32),pitch(30)

GOSUB boxes
GOSUB random
select%=0
WHILE select%<>15
  GOSUB getselect
  IF select%=1 THEN
    GOSUB square
  ELSEIF select%=2 THEN
    GOSUB sawtooth
  ELSEIF select%=3 THEN
    GOSUB random
  ELSEIF select%=4 THEN
    GOSUB pulse
  ELSEIF select%=5 THEN
    GOSUB triangle
  ELSEIF select%=6 THEN
    GOSUB noise
  ELSEIF select%=7 THEN
    GOSUB filter
  ELSEIF select%=8 THEN
    GOSUB filterfive
  ELSEIF select%=9 THEN
    GOSUB louder
  ELSEIF select%=10 THEN
    GOSUB newwave
  ELSEIF select%=11 THEN
    GOSUB fourier
  ELSEIF select%=12 THEN
    GOSUB centre
  ELSEIF select%=13 THEN
    GOSUB undo
  ELSEIF select%=14 THEN
    GOSUB wavesave
  END IF
WEND
CLS
END

newwave:
  LINE (64,6)-(576,134),2,bf
  FOR s%=0 TO 255
    Backup%(s%)=Timbre%(s%)
    Timbre%(s%)=INT(a(s%))
    PSET (64+2*s%,70-Timbre%(s%)/2)
  NEXT
  WAVE 0,Timbre%
  SOUND 256,40,200,0
RETURN

getselect:
select%=0
WHILE select%=0

REM Remove previous mouse clicks
WHILE MOUSE(0)>0
WEND

WHILE MOUSE(0)=0
WEND

x%=MOUSE(1)
ix%=INT(x%/128)
y%=MOUSE(2)
iy%=INT((y%-159)/8)
IF iy%=0 THEN
```

```
    select%=3*ix%+1
  ELSEIF iy%=1 THEN
    select%=3*ix%+2
  ELSEIF iy%=2 THEN
    select%=3*ix%+3
  ELSE
    select%=0
    IF x%>63 AND x%<576 AND y%>6 AND y%<135 THEN
      s%=(x%-64)\2
      PSET (64+2*s%,70-INT(a(s%))/2),2
      a(s%)=(70-y%)*2
      PSET (64+2*s%,70-INT(a(s%))/2)
    END IF
    IF y%>142 AND y%<152 THEN
      SOUND pitch(INT(x%/21)),.6,200,0
    END IF
  END IF
  WEND
  RETURN

  boxes:
  FOR y%=0 TO 2
    FOR x%=0 TO 512 STEP 128
      READ a$
      LOCATE 21+y%
      PRINT PTAB (x%+20);a$;
    NEXT
  NEXT
    LINE (0,159)-(640,159),3
    LINE (0,167)-(640,167),3
    LINE (0,175)-(640,175),3
    LINE (0,183)-(640,183),3
    FOR x%=128 TO 512 STEP 128
      LINE (x%,159)-(x%,183),3
    NEXT

    FOR y%=6 TO 134 STEP 16
      LINE (58,y%)-(582,y%),3
    NEXT
    FOR x%=72 TO 576 STEP 16
      LINE (x%,140)-(x%,134),3
    NEXT

    LOCATE 19
    a%=67
    FOR x%=0 TO 588 STEP 21
      PRINT PTAB(x%+6)CHR$(a%);
      a%=a%+1
      IF a%=72 THEN a%=65
      LINE (x%+21,142)-(x%+21,152),3
    NEXT
    LINE (0,142)-(640,142),3
    LINE (0,152)-(640,152),3

    FOR s%=0 TO 6
      READ pitch(s%)
      pitch(s%+7)=pitch(s%)*2
      pitch(s%+14)=pitch(s%)*4
      pitch(s%+21)=pitch(s%)*8
    NEXT
    pitch(28)=pitch(0)*16
    pitch(29)=pitch(28)
    pitch(30)=pitch(29)
  RETURN

  DATA "  square  "
  DATA "  pulse   "
  DATA "  filter  "
  DATA "  resound "
  DATA "   undo   "
  DATA " sawtooth "
  DATA " triangle "
  DATA "filter x 5"
  DATA "  fourier "
  DATA "   save   "
  DATA "  random  "
  DATA "  noise   "
  DATA "  louder  "
  DATA "  centre  "
  DATA "   quit   "

  DATA 130.81,146.83,164.81
  DATA 174.61,196,220,246.94

  sawtooth:
    FOR s%=0 TO 255
      a(s%)=s%-128
    NEXT
    GOSUB newwave
  RETURN

  square:
    FOR s%=0 TO 127
      a(s%)=-128
    NEXT
    FOR s%=128 TO 255
      a(s%)=127
    NEXT
    GOSUB newwave
  RETURN

  triangle:
    FOR s%=0 TO 127
      a(s%)=s%*2-128
    NEXT
    FOR s%=128 TO 255
      a(s%)=127-(s%-128)*2
    NEXT
    GOSUB newwave
  RETURN

  pulse:
    FOR s%=0 TO 240
      a(s%)=-128
    NEXT
    FOR s%=241 TO 255
      a(s%)=127
    NEXT
    GOSUB newwave
  RETURN
```

```
random:
  a(0)=RND*256-128
  FOR s%=1 TO 255
    a(s%)=a(s%-1)+RND*40-20
    IF a(s%)>127.9 THEN a(s%)=127.9
    IF a(s%)<-128 THEN a(s%)=-128
  NEXT
  GOSUB newwave
RETURN

noise:
  FOR s%=0 TO 255
    a(s%)=RND*256-128
  NEXT
  GOSUB newwave
RETURN

filter:
  LOCATE 10,32
  PRINT " Please Wait ";
  FOR t%=0 TO 24
    GOSUB onefilter
  NEXT
  GOSUB newwave
RETURN

filterfive:
  LOCATE 10,32
  PRINT " Long Wait! "
  FOR t%=0 TO 124
    GOSUB onefilter
  NEXT
  GOSUB newwave
RETURN

onefilter:
  temp=a(0)
  FOR s%=0 TO 254
    a(s%)=(a(s%)+a(s%+1))/2
  NEXT
  a(255)=(a(255)+temp)/2
RETURN

louder:
  FOR s%=0 TO 255
    a(s%)=a(s%)*2
    IF a(s%)>127.9 THEN a(s%)=127.9
    IF a(s%)<-128 THEN a(s%)=-128
  NEXT
  GOSUB newwave
RETURN

centre:
  sum=0
  FOR s%=0 TO 255
    sum=sum+a(s%)
  NEXT
  sum=sum/256
  FOR s%=0 TO 255
    a(s%)=a(s%)-sum
    IF a(s%)>127.9 THEN a(s%)=127.9
    IF a(s%)<-128 THEN a(s%)=-128
  NEXT
  GOSUB newwave
RETURN

undo:
  FOR s%=0 TO 255
    a(s%)=Backup%(s%)
  NEXT
  GOSUB newwave
RETURN

wavesave:
  LOCATE 10,25
  INPUT "Waveform name: ",w$
  w$=w$+".wave"
  OPEN w$ FOR OUTPUT AS #1
  FOR s%=0 TO 255
    WRITE #1,Timbre%(s%)
  NEXT
  CLOSE #1
  GOSUB newwave
RETURN

fourier:
  LINE (64,6)-(576,134),2,bf
  factor=2*3.1415926#/256
  FOR h%=1 TO 32
    a=0:b=0
    FOR s%=0 TO 255
      a=a+a(s%)*SIN(s%*factor*h%)
      b=b+a(s%)*COS(s%*factor*h%)
    NEXT
    harm(h%)=(a^2+b^2)^.5/128
    IF harm(h%)>.5 THEN
      LINE (55+h%*16,134)-(57+h%*16,134-.79*harm(h%)),,bf
    END IF
  NEXT
RETURN
```

Program 2

```
REM Waveform Loader Program
REM by Phil Wilkes  June 1988

DIM Timbre%(255)
INPUT "Enter waveform name : ",w$
w$=w$+".wave"
OPEN w$ FOR INPUT AS #1
  FOR s%=0 TO 255
    INPUT #1,Timbre%(s%)
  NEXT
CLOSE #1
WAVE 0,Timbre%
SOUND 250,10,200,0
END
```

TURBOPRINT & INT-SWITCH

Alastair Statham has found his hard copy easier and his memory more manageable since discovering two new utilities from PDC

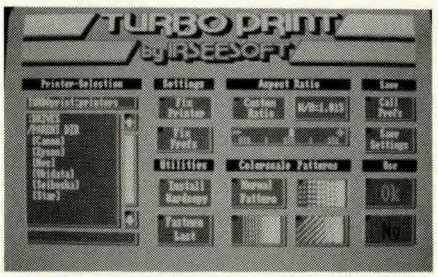
TURBOPRINT

Anyone suffering the shortcomings of the printer support in WB1.2 and either unable to wait for WB1.3 or doubting that it will be a complete solution now has yet another alternative. TURBOprint is available NOW and it offers both support for a wide variety of printers and enhanced printing speed. It is written entirely in 68000 assembler and occupies just 15k of RAM. The Amiga printer-device has been reprogrammed to give extended function compatible with the supplied turbo-drivers. TURBOprint runs invisibly in the background complementing the existing preferences and providing extra facilities such as fast-RAM disable and hot-key screen printing in both colour and monochrome.

"TURBOprint runs invisibly in the background complementing the existing preferences and providing extra facilities"

TURBOprint is initialised by booting from it instead of the Workbench disk. Although a copy of the disk may be used the key disk is annoyingly still needed to complete the initilisation. Once loaded the Amiga is reset and Workbench may be loaded as normal. TURBOprint will survive any subsequent soft-reset of the Amiga. The printer preferences are controlled from a single screen which is invoked by clicking the TURBOPREFS icon from the TURBOprint disk. There are so many printer types that each manufacturer has their own subdirectory. Aspect ratio control and colourscale shading pattern selection are both supported. If memory permits the printer and preferences settings can be fixed in memory using simple toggle gadgets. All controls are thoroughly documented in the eighteen page A5 handbook supplied with the disk.

To print a picture you need only press CTRL & ALT + P. This will print out the present screen contents regardless of screen mode including HAM. Alternatively a Black & White dump can be obtained by pressing CTRL & ALT + O. The background



colour when using this mode is set to white to reduce ribbon wear. Printing can be aborted at any time by using the cTRL & ALT + C combination.

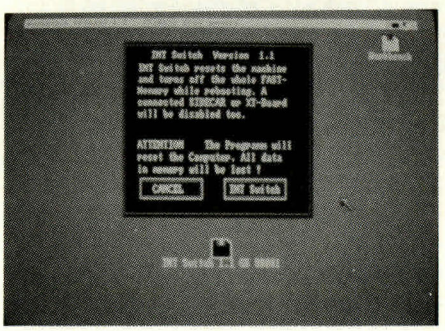
TURBOprint is designed to be compatible with all Amigas and most printers. Its fast support for dot-matrix, thermal, ink-jet and laser printers deserves to attract the attentions of anyone struggling with the limitations of the standard WB1.2 printer support. Especially if they are willing to pay around thirty pounds for a comprehensive answer.

INT-SWITCH

All those lucky people who have upgraded their Amigas to have over 512k of RAM can now be rid of the menace of programs unable to cope with the extra storage. For under ten pounds George Thompson Services are now offering a software solution called INT-SWITCH. This useful little utility, from PDC, goes several steps further than NOFASTMEM as it not only freezes out the RAM expansion but also turns off Sidecar and XT/AT boards. It also survives a soft reset of the Amiga, which means that at last you can run those programs than need booting from cold without having to take the otherwise unnecessary risk of unplugging peripherals first.

"It not only freezes out the RAM expansion but also turns off Sidecar and XT/AT boards"

Supplied on a single disk in a wallet on which are printed just four lines of instructions, INT-SWITCH is simplicity itself to use. Clicking the single icon displayed by selecting the INT-SWITCH disk will display a requestor offering the options of cancelling the function or installing INT-SWITCH. If you elect to install the utility it will tuck itself away, disable any extra RAM, Sidecar, or XT/AT boards and reset the Amiga. If you do not want the bother of using yet



another disk at start-up time you can even copy INT-SWITCH to your Workbench disk because copy-protection has thankfully been waived in the interests of convenience to the user. This low cost, easy to use solution to an age-old problem should prove attractive to anyone who is tired of continually removing expansion boards just to let undisciplined programs run. ***A.S.***

Contact: George Thompson Services, Freepost, Dippen, Brodick, Arran, Scotland KA27 8PT. (077 082) 234.

FOOTBALL II

Addictive

The success of Football Manager surprised many people. Instead of recreating the action of on-field football, it put you in the boots of the manager. This meant most of the game was played with text screens, only very basic match highlights provided some action. Yet it stayed a top seller for years; in fact the longest ever chart inhabitant in all formats except perhaps for Sublogic's venerable Flight Simulator. Now Amiga users can get in on the management game with the sequel.

After an untidy, but impactful, title screen you are asked to choose your team. The mouse cycles through a list of teams until you find the one you want. Next you are offered sponsorship which you can accept or reject in anticipation of a higher sum. After picking the skill level you are ready for the first game.

Eleven blank boxes are laid out across the pitch representing the available positions. Here you can weigh up the pros and cons of each player's skill and fitness ratings and decide upon the formation. You can pick your defenders, midfield and attackers, judging carefully the skill and fitness levels. Now you can sit back and watch the game.

This is where the most obvious improvement has been made. Whereas the original only showed a few goal-mouth incidents for each game, FM II shows highlights across the whole pitch. There is some minor difficulty in keeping track of the ball and knowing who is in possession. Occasionally the action seems jerky and the players mark each other very tightly but it certainly serves its purpose of creating tension. A few sampled crowd cheers add to the atmosphere.

MANAGER I

At half time you can put on a couple of substitutes if you see players tiring. Action replays and a scoreboard keep you up to date with the score. And if you are the football manager you think you are, victory may be yours, accompanied by 'over the moon' joy for you and 'parrot sickness' for your opposition.

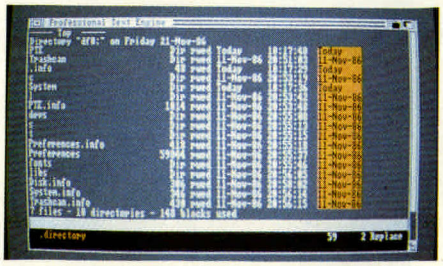
After the match you are given an injury report. Any player with a fitness rating of less than fifty will have to be rested. Between matches you can also buy and sell players, give the team passing practice, view your financial and league status and load or save the game situation. At first it may seem there is a lot to the game but once a few games have been played, the same situations occur quite often. Even so, the role of manager is highly involving, a feeling enhanced by watching the match sequences.

Though many people will have experienced Football Manager I, there certainly seems a place for FM II on the Amiga – there is nothing like it. I had expected a more user-friendly game from the Amiga; the use made of the mouse is not what it should be. Despite that, FM II will be well appreciated and enjoyed by football fans. It is already being spoken of as the Chart Number One in a number of formats and in many countries. But it probably will not go on to top the FM I, Kevin Tom's famous forerunner – change in computing is moving to quickly. But who would have predicted a five year life for that when it came out?

B.V.

PROFESSIONAL TEXT ENGINE

Finding a text editor that will meet ALL your requirements is likely to be very difficult. Les Cooke, however, has discovered a multi-talented editor that might just that.



Do your remember the 'editors' provided with the early home computers? They were pretty crude affairs. They usually operated one line at a time and to make any changes was not easy. In fact, they were downright tedious! After a while, 'full-screen' editors arrived. The Amiga provides two full-screen editors: 'ED' and the BASIC editor provided on the 'EXTRAS' disk.

Both these editors are dedicated to a particular type of editing. 'ED' is perfectly adequate for general text and command files, while the BASIC editor is quite good for BASIC programs. Neither editor would be much good for word processing applications. They do not have the appropriate formatting functions and the BASIC editor would have the disturbing habit of converting certain words to upper case!

Word processing is best done with an editor designed specifically for word processing – a dedicated editor. 'Scribble!' and 'Textcraft' are two such products available for the Amiga, both of which are excellent word processors. However, whilst they would probably be adequate for entering programming language source, this particular job could be made a lot easier if you had an editor tailored to the language you were using.

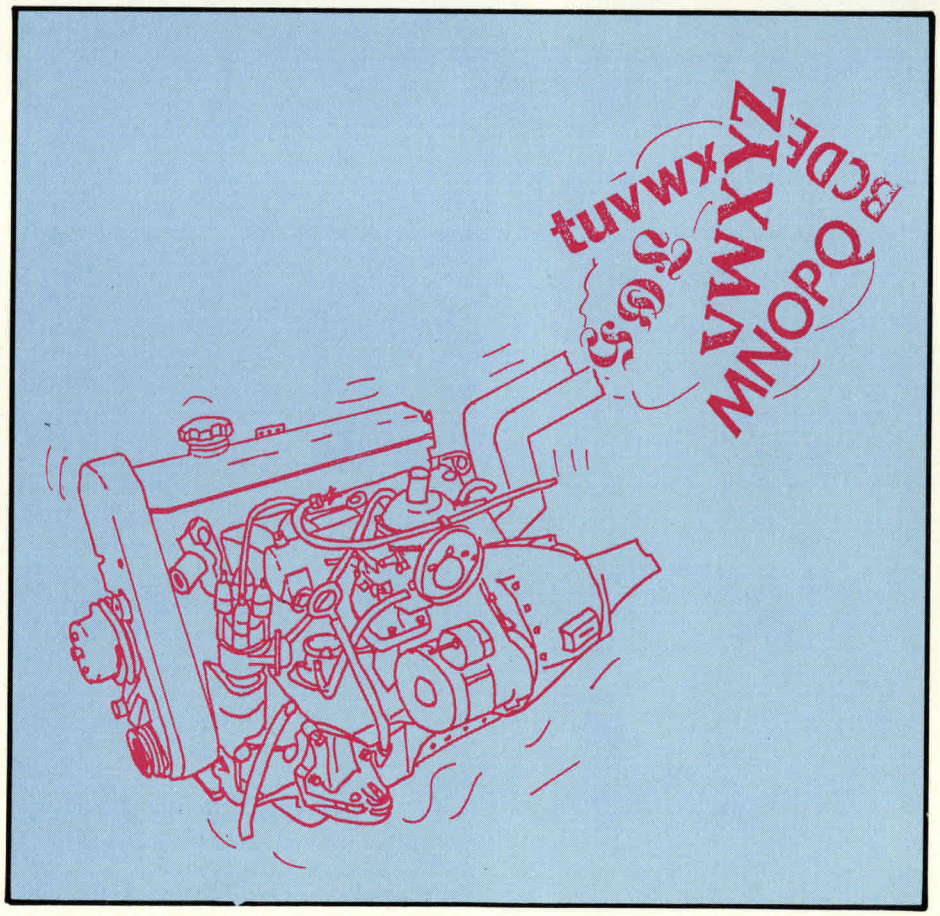
The BASIC editor supplied on the 'EXTRAS' disk goes a little way to provide such tailoring. All BASIC commands and reserved words are converted to uppercase and when a new line is started it preserves the indentation of the previous line.

A clever editor could go a little further than this. How many times have you made silly errors like a 'WHILE' without a 'WEND', a 'FOR' without a 'NEXT', or a 'GOSUB' without 'RETURN'? Never? Come on – be honest. This clever editor could supply the necessary terminating parts of those statements automatically and even look after the indentation of nested constructs. This would save those daft time-consuming, errors and force a consistent style to your source. A consistent style is quite important, it makes the source easier to read. If you can read it easily, you stand a better chance of understanding it and if you understand it you might get it right.

Professional Text Engine (PTE) attempts to resolve this need for different kinds of editors for different jobs by providing one that can be tailored as you wish. However, before going any further into this let us have a quick run-down on the essentials of PTE.

PTE is distributed on a single disk that is not copy protected. This disk is pretty much full, so two disk drives would make life easier. It will run on a 512K machine but as the files being edited are held in storage a larger machine would be advantageous. A comprehensive 200 page manual is supplied. It contains two distinct parts: the first describes how to use PTE and some of its functions, the second is a reference section of the commands and functions in alphabetical order. The manual does not take into account any special features of the Amiga but an Addendum file is provided on the disk to rectify this.

Although the manual does not mention

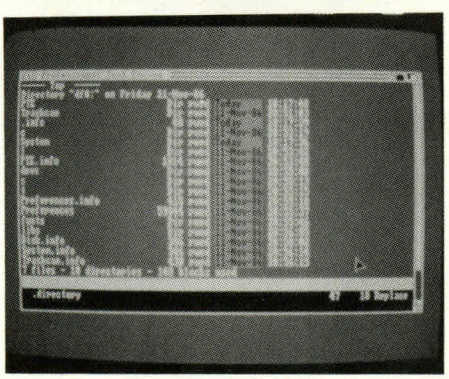


Amiga features, PTE does use them and is started in the usual way, by clicking on icons. I was disappointed to find that the editing window was NTSC size and there appeared to be no way to change this. This window is divided into separate parts. The top line of the window is the usual Menu Bar for pull-down menus. The bottom line is for messages, the next line up is the Status Line and above that is the Command Line. The Message Line is for error and informational messages, the Status Line shows the file name, cursor position (row and column number) and edit mode, while the Command Line is for entering Commands and Functions. Between the Menu Bar and the Command/Message/Status Line is the Editing Area itself.

At the right of the window is the familiar vertical scrolling bar but there is no horizontal scrolling bar. I found this inconvenient for files wider than the window. There is no font control, text style control, nor colour control. There is no spelling check nor word count and PTE uses the American keymap as standard.

PTE is 'driven' in the usual ways: Pull-down menus, function keys and a command line. So far, so good. Not much different from other editors. However, what makes PTE special is its very rich function language. This function language is in effect a high-level language that is purpose built to operate on the file being edited. It allows you to tailor the way PTE behaves in almost any way you chose by creating 'definitions' from the function language.

PTE is supplied with a number of these definitions. They control the way in which PTE behaves and definitions are included for editing: C source, Assembler source and general documents. One defintion even provides an approximation of 'WordStar'. These definitions are actually made up from the functions and commands that are part of PTE. They are in files that can be viewed with PTE, or any other editor and can be used as examples for your own definitions or modified in your own way.



PTE comes with a number of features that make it stand out from most other editors: 'blocks', an extended command set, a function language and a directory list facility.

Blocks

The scope of some of the commands and functions in PTE can be limited to blocks of text rather than the whole file. A block can be any rectangular area within the file and need not be limited to complete lines. For example, it is possible to define a block covering columns 3 to 7 and extending from lines 10 to 76. The block is indicated by being highlighted as a different colour (orange by default) and most functions will operate on the text only in this block.

Extended Command Set

PTE contains a number of commands not often found in other editors. These include: FILL, NUMBER, SORT, DEFINE, MACRO and MENU.

FILL fills a block with a specified string. NUMBER numbers lines in a block with a right justified column of numbers and allows you to specifiy the starting number, the increment and the base. SORT allows you to use the characters in a block as a key for sorting all the lines touched by that block. Sorting can be in ascending or descending order. DEFINE allows you to define a Function or a literal to a Function Key. E.G. DEF F10 = 'What is the difference between a duck?' will put the string at the current cursor position when F10 is pressed.

Commands themselves can be used as program steps in a macro file. The MACRO command causes execution of the commands in the file. MENU allows you to define your own pull-down menus. Finally, a refinement of the LOCATE and CHANGE commands is that you can specify precise matching rules.

Function Language

There are about 160 functions in PTE. They range from logical operations such as IF LEFT EDGE which tests if the cursor is at the left edge of the screen, to manipulation type functions such as RIGHT JUSTIFY BLOCK which right justifies text in a block to the right edge of that block.

'Function can be assigned to any keys, not just the function keys'

These functions are the powerhouse of PTE – they can make it sing and dance (well, almost). Functions can be assigned to any keys, not just the function keys and also keys in combinations with SHIFT, ALT and CTRL. In addition, new commands can be defined by assigning the command name to a small program written in the function language. Here are some examples.

'Def F7 = [delete line]' assigns the delete line function to function key F7. When F7 is pressed, the line on which the cursor is placed will be deleted.

'Def s–F8 = [previous file]' assigns the previous file function to the SHIFT F8 key combination.

The next example shows how a new command is defined. The command is called 'close-window' and it saves all modified files, quits unmodified files and unconditionally quits a file if it has a name of 'directory'.

```
def close-window = [do]
def close-window + [if same] 'directory' [environment 113]
def close-window + [execute] 'quit confirm'
def close-window + [else]
def close-window + [if modified]
def close-window + [error 2] 'Saving file . . .'
def close-window + [execute key F3]
def close-window + [else] [execute] 'quit'
def close-window + [end if]
def close-window + [end if]
def close-window + [loop]
```

I think this last example illustrates the power of PTE. It shows that the function language is a real programming language with loops, conditions, nested conditions and readability. In addition to the necessary logical constructs illustrated in this sample, the range of functions provided covers ones to process text, some to control the environment and some to interact with the mouse.

One example of how functions have been used to create useful definition files is in the definition for C Source files. In this, operation of SHIFT RETURN will place an opening brace '[' at the end of the current line and insert a closing brace ']' on the next line indented to the same position as the previous line. No mismatching braces here!

Directory List

Finally, a very useful command is DIRECTORY. This creates a list in your editing window of the files in the current directory. The list is AMIGADOS LIST format. Double clicking on an entry in this list will either present another list if you clicked on a directory, or present you with a file for editing if you clicked on a file name. I liked this feature a lot.

PTE is, then, a powerful and flexible editor. To get the most out of it you will have to invest quite a bit of time learning how to program and use the functions to your best advantage. Perserve, it will be worth it.

L.C.

Price: £49.95
Contact: Digipro Ltd, Enterprise House, Howards Grove, Southampton SO1 5RP. Tel: (0703) 703030.

NEW! NEW! NEW!
TOP QUALITY AMIGA ACCESSORIES!

AMIGA STEREOSOUND KIT

Now you can connect your Amiga 500 to virtually any Hi-Fi or stereo system for incredible true stereo sound, with our latest product. Your Hi-Fi or stereo will amplify the sound and play it through its own stereo speakers. Complete package includes special connection leads and interchangeable adaptors that simply plug into your Amiga and Hi-Fi.
Also includes adaptors to connect any stereo headphones, so you don't have to blast everyone's eardrums when you're blasting aliens.
Perfect for games and music packages, unleash the stereo music power of your Amiga!

ONLY £9.95 POST FREE!

AMIGA STEREOSOUND DIGITIZER

High Quality two channel sound digitizer, compatible with any parallel port digitising software. Fantastic sound quality, especially when used with the Stereosound kit above. The unit is about the size of an external disk drive, and does not require any external power supply. Available for A500/1000/2000 (Please State).

ONLY £69.95 POST FREE!

AMIGA EXTERNAL DRIVE SWITCHER

Switched connector for external disk drive, simply flick the switch to disable your extra drive. Some programs will not work with extra drives connected, this useful product will save you the hassle of unplugging.

ONLY £9.95 POST FREE!

AMIGA JOYSTICK/MOUSE PORT EXTENDER

Brings the mouse/joystick ports to the front of the computer for easier access. Includes bracket for mounting the extended sockets at a more convenient location.

ONLY £9.95 POST FREE!

AMIGA DUST COVER ONLY £4.95 POST FREE!

Send Cheque or P/O payable to Robson Electronics to:

ROBSON ELECTRONICS (DEPT AUI 1)
Newcastle House, Rowlands Gill, Tyne & Wear NE39 2BL
Telephone: (0207) 543053 (Ask for Robson Electronics)

We are open for enquiries 10-5 Mon to Fri (closed Sat/Sun).
Please don't forget to enclose your name and address with orders.

HAMMERSOFT

MAIL ORDER SPECIALIST

New	
Aaargh!	£13.50
Armageddon Man	£15.50
Barbarian (Palace)	£13.50
Bard's Tale II	*£17.90
Better Dead Than Alien	£13.50
Bionic Commandos	*£16.50
Black Lamp	£13.50
BMX Simulator	£10.50
Bubble Bobble	£13.50
Bubble Ghost	*£16.50
Carrier Command	*£16.50
Crack	£13.50
Emerald Mine	£13.50
Enlightenment	£13.50
P.B.'s International Football	£13.50
Ferrari Formula 1	£18.50
Fire & Forget	*£16.50
Football Manager II	£13.50
Gunship	*£24.00
Hard ball	16.50
Interceptor	£18.90
Leathernecks	£13.50
Mach III	£13.50
Mean 18	£16.50
Mind Fighter	*£16.50
Police Quest	*£13.50
Return To Atlantis	£18.50
Rocket Ranger	*£19.90
Rolling Thunder	£16.50
Starglider II	*£16.50
Strike Force Harier	£16.50
The Sentinel	*£13.50
Three Stooges	£19.50
Vixen	*£15.90
LEISURE	
Arazok's Tomb	£24.00
Bard's Tale	£17.90
Defender of the Crown	£19.90
Faery Tale Adventure	£31.90
Flight Sim. II	£31.90
Scenery 7 or 11	£16.50
Scenery Western Europe	£16.50
Hunt for Red October	£16.50
JET	£28.90
King of Chicago	£19.90
Seven Cities of Gold	£12.00
Shadowgate	16.50
Sherlock Holmes	£16.50
Star Fleet	£19.00
Silent Service	£16.50
Time & Magic	£16.50
Chesssmaster 2000	£18.50
Galileo (Astronomy)	£47.00
BUSINESS	
Scribble 2	£75.00
Softwood Write & File	£75.00
Superbase Personal	£79.90
Word Perfect	£170.00

GRAPHICS	
Aegis Video Titler (PAL)	£89.00
Animator/Images	£75.00
Draw Plus	£138.00
Impact	£47.00
Videoscape 3D (PAL)	£107.50
Animator Apprentice	£179.00
Animator Apprentice Jnr	£53.00
Animator Jnr Libraries (each)	£15.90
Deluxe Paint II (PAL)	£49.90
Deluxe Video (PAL)	£60.00
Deluxe Productions	£120.00
Digipaint (PAL)	£44.00
Digiview 2.0 (PAL)	£154.00
Digiview Adaptor	£20.00
Photon Paint	(NOW) £60.00
Pro Video	£129.00
Pro Video Fonts I or II	£60.00
Sculpt 3D (PAL)	£59.00
Sculpt 3D Animate (PAL)	£107.00
TV Show (PAL)	£79.00
TV Text (PAL)	£75.00
TOP GAMES	
Backlash	£13.50
Barbarian (psyg.)	£16.50
Dark Castle	£16.50
Eagles Next	£13.50
ECO	£16.50
Firepower	£16.50
Garrison I or II	£16.50
Gold Runner	£16.50
Insanity Fight	£16.50
Mercenary Compendium	£16.50
Mission Elevator	£13.50
Obliterator	£16.50
Pink Panther	£13.50
Roadwars	£13.50
Sidewinder	£8.90
Star Glider	£16.50
Star Wars	£13.50
Terramex	£13.50
Terrorpods	£16.50
Test Drive	£17.50
Time Bandits	£13.50
Wizball	£16.50
Xenon	£13.50
MUSIC	
ADrum	£32.00
Aegis Audiomaster	£34.00
Aegis Sonix	£45.00
Futuresound Digitizer	£169.00
Instant Music	£18.00
QUALITY JOYSTICKS (Microswitched)	
Cheetah Mach 1+	£13.90
Comp Pro 5000	£13.90
Comp Pro Extra (clear)	£14.90
Cruiser	£9.00
Quickshot II Turbo	£12.00

* AVAILABLE ON RELEASE

Send cheques/postal orders to: HAMMERSOFT

33 Mill Road, Hethersett, Norwich, Norfolk NR9 3DS
All prices include VAT + 1st CLASS POST in UK
EEC add £2.00 postage per item (Airmail)
EEC add £1.50 postage per item (Surface)

ENQUIRIES: PHONE (0603) 812416

1.1

Shakespeare 1.1 is here!

RRP £129+VAT

New and better features to make Color Desktop Publishing even more easy, even more exciting!

- The highest quality black-and-white output with 16 different grey-scales
- Improved Memory Management
- New alignment guides and better rulers
- Make columns with the click of a button
- Use Foreign Keymaps
- Faster PostScript printing
- Support for all graphics capable Preferences Printers, including the NEC and Toshiba 24-pin printers
- Comes with Clip art. Fonts, and a set of Design Templates

Cloudhall Limited

Bensead House
40 Hazelwood Road
Northampton NN1 1LN
United Kingdom.

RRP £129+VAT
INTERNATIONAL DEALER ENQUIRIES WELCOME

Telephone : Northampton (0604) 231211
Telex : 317198 COGRAM G
Facsimile : Northampton (0604) 231412

Public Domain Software for the Amiga

from £3 per disk all inclusive

★ Membership not necessary
★ Fast service

We have one of the largest collections of PD software for the Amiga in the UK. We currently stock:

- ○ FISH 1-138
- ○ AMICUS 1-26
- ○ SLIPPED DISK 1-40
- ○ FAUG HOTMIX 1-53

All the above are £3 each + 1 FREE when you order 10

Catalogue disk #1 available for £3

APDL special selections PaNorAmA and AUGE prices £4 each plus 1 FREE when you order 10, or £3 each for members of the Amiga Users Club.

Our own special selection

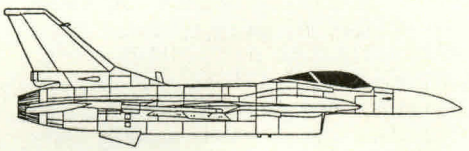
- ○ APDL #8 AMIGA DISK DOCTOR Life saving programs!
- ○ APDL #9 SPACE SHOOT 'EM UPS Invaders, missiles, cosmonoids etc.
- ○ APDL #11 AMIGA MOVIES Eye-popping demos
- ○ APDL #12 AMIGA SONIX Let your Amiga sound off
- ○ APDL #14 BEST ARCADE GAMES
- ○ APDL #15 BEST BOARD GAMES Backgammon, Othello, Yahtzee etc.
- ○ APDL #17 BUSINESS COLLECTION Editor, spreadsheet & database
- ○ APDL # 19 WORKBENCH HACKS Classic practical jokes
- ○ APDL #20 ANTI ST DISK The Amiga gets its revenge!
- ○ APDL # 21 VIRUS KILLER COLLECTION Programmes to detect and kill the Virus

★ STOP PRESS ★
Just in some exciting new PD collections:
from the USA, PaNorAmA 1-62, from Germany, AUGE 1-17
Catalogue disk # 2 available £3

THE AMIGA PD LIBRARY (DEPT AUI)
140 Rushdale Road, Sheffield, S8 9QE
PD Hotline 0742-588429 (9am-9pm)

GAMES BOOKS

Film of the book, stage play of the film and now . . . Book of the Game! Bill Donald 'flies' through a selection of games books.



Software simulations are growing in popularity. The venerable *FLIGHT SIMULATOR* has been around since 1982 and continues as a solid seller in the PC, Macintosh and Amiga markets. I am willing to bet that in ten years time when a lap-top 50MHZ 68040 machine is considered passè, *FLIGHT SIMULATOR* in one shape or form will still be in the top ten selling recreational software. However, *FLIGHT SIMULATOR* is under attack from other types of simulation, in particular maritime simulations. The third but rather more conventional is the war-game/political strategy simulators.

There are some books which serve as an adjunct to simulation software. Some of these are not yet freely available in Europe. However, you should be able to order them using the ISBN code.

Since *FLIGHT SIMULATOR* is generally recognised as the great grandfather of the breed books available are:

Flight Simulator Co-Pilot

Flying on Instruments with Flight Simulator

Flight Simulator Co-Pilot

The author of *Flight Simulator Co-Pilot* has written two previous books on *FLIGHT SIMULATOR*. These were simply a series of flight descriptions – you had to input the given position setting and then follow the narrative. Obviously, after working your way through the books, there was little else for you to do, other than start again. The books concerned were published by Compute! Books and came under the generic titles of *40 Great . . . Adventures.*

In this book the author develops the theme of descriptive flights and provides operating details of the aircraft you are flying. The information goes beyond that described in the documentation supplied to a *FLIGHT SIMULATOR* user.

Flight Simulator Co-Pilot is divided into three sections – basic flight instruction, navigation and instrument flying and flying for fun. The first section deals with most aspects of the aircraft and the reader is given comprehensive coverage of controlling turns, climbs and descents. If you have difficulty in take-offs and just flying your aircraft, then this section provides a wealth of very useful information.

The second section is slightly more advanced and is concerned with events outside the aircraft. Here we are introduced to the intricacies of navigation using instruments. Assumptions are made that you are able to fly straight and level and can complete a take-off and landing without disaster. I found this section to be very valuable and learned a great deal.

The ultimate test of your navigational knowledge using *FLIGHT SIMULATOR* is a night flight and you really have to know your stuff when it comes to landing – just to make it more fun, try the effect of having a cloud-base down to 500 feet. This is guaranteed to test your nerve!

Section Three provides a selection of flights to various places which are enhanced with ILS (Instrument Landing System) approaches, half-rolls and explore the riddle of Eagle Field clones. The only flaw with this section is that certain flights require the use of Scenery Disks 2-5. Unfortunately, these are not yet available for the Amiga. At the time of writing we have to be content with scenery disks 7 and 11.

If you want to go beyond the user documentation of *FLIGHT SIMULATOR*, then this book should be the first item on your list.

Title: Flight Simulator Co-Pilot
Author: Gulick C
ISBN: 1-55615-001-6
Publisher: MicroSoft Press
UK Price: £7.95

Flying on Instruments with Flight Simulator

The blurb on the cover of this book informs us that you can learn to *'Fly in the worst weather, the densest clouds, and darkest nights in Flight Simulator'!* Well this seems just a little optimistic for both the abilities of the software and most would-be pilots. However, this book does go a very long way to providing a basis for learning more about instrument flying.

The bulk of this book is made up of IAP (Instrument Approach Procedure) charts for a huge number of USA airports. In common with the first book in this review, many of these are just not accessible due to the limited number of scenery disks. However, these charts are considerably more detailed than those supplied with the scenery disks and *FLIGHT SIMULATOR* itself. For example, the charts provide details of alternative runways at an airport as well as missed-approach procedures. The appendix also provides a rate-of-descent table, useful where the localiser is only a course direction type.

Chapter three explains the syntax and structure of an IAP chart. The following chapter leads you into the aircraft electronic equipment (avionics) and how to begin an instrument-controlled flight. The chapter concludes with a take-off under instrument control. Chapter five, six and seven get down to the meat of the subject and take you through VOR (VHF Omnidirectional Range) approaches, NDB (NonDirectional Beacon) approaches and ILS (Instrument Landing Systems) approaches.

The final chapter attempts to put some of what you should have learned into

continued

practice. A night landing scenario is no problem, you reply – but this one is over water! What do you do when you are in cloud and part of your instruments fail? Chapter eight gives some suggestions.

I found it all rivetting stuff, principally because it revealed yet another rich layer of skills and knowledge necessary if you want to really get into flying. I have to admit to my admiration of the original programmer of *FLIGHT SIMULATOR*, Brue Artwick, for providing a seemingly endless simulatory experience. OK, I will admit it, it is STILL one of my favourite pieces.

Strongly recommended if you want to enter the elite band of *FLIGHT SIMULATOR* experts. The subject matter is, of necessity rather technical but this book makes it digestible. My only complaint was related to the binding. A spiral-bound book makes more sense when there are a large number of diagrams. Unfortunately, this book was perfect-bound and consequently was difficult to lay flat without ultimately causing damage to the binding.

Title: Flying on Instruments with Flight Simulator
Author: Stern J.M.
ISBN: 0-87455-091-2
Publisher: Compute! Books
USA Price: $9.95

Sub Commander Tactics and Strategy for WWII Submarine Simulations

A completely new market was discovered by software houses during 1980 – maritime simulations, in particular submarines. The first of the breed was *SILENT SERVICE* which was quickly followed by *SUB BATTLE SIMULATOR* and *UP PERISCOPE!* Although these have gained in popularity they do not, as yet, offer the depth (pun unintended) and range of *FLIGHT SIMULATOR*. In fairness to these software pieces, they are still first-generation and *FLIGHT SIMULATOR* has a five year lead. However, there seems plenty to suggest that the same type of position-setting mechanism could be incorporated into submarine simulations to give infinite variety. The only problems appear to arise over how the visual data is collected. Anyone can rent an aeroplane and capture the necessary data, finding someone who will let you borrow their submarine could be just a little tricky!

Given the limitations of the current generation of submarine software, this book has some obvious *padding*. In fairness, this is not meant as a criticism, because the padding serves as useful background material to what life was like in a USA Pacific submarine during the 1939-1945 conflict. Having read this account, it convinced me that anyone who can live and work in a submarine deserves a medal or mental certification. I rather suspect that I would quickly fall into the latter category!

The real learning starts in chapter four and continues through to chapter six. In these parts the reader is introduced to explanations and illustrations of basic attack philosophy. We learn about attack tactics, defensive strategies and manoeuvres. When you have gained some idea of this, the book moves us on to a hints and tips section for each software simulation.

I must admit that I picked up a lot more knowledge than I realised and this was reflected in my playing of *SILENT SERVICE*. Anyone who can sink a cruiser, carrier and two destroyers in the impossibly difficult War Fleet scenario and still survive must be doing something right. Some very useful tips such as firing a spread of torpedoes whilst at depth in the direction of the target usually manages to hit something were culled from this book.

The book is well illustrated with diagrams to amplify the text and gives a great deal more information on the various control factors than the user documentation. *SUB COMMANDER* makes it clear the key to successfully sinking your opponents is patience, patience and more patience.

Very readable and eminently useful for anyone who has one of these rivetting simulations.

Title: Sub Commander Tactics and Strategy for WWII Submarine Simulations
Author: Sheffield J.M.
ISBN: 0-87455-127-7
Publisher: Compute! Books
USA Price: $12.95

Balance of Power International

Politics as the Ultimate Global Game

This game has gained a cult following for a large number of reasons. The first is the infinite variety it offers, the second is that *BALANCE OF POWER* requires a level of intellect that is beyond the scope of most recreational software. The object of the simulation is simple – to score points over and above your opponent, the Amiga, by gaining prestige and influence among the nations of world. However, the world *influence* does not mean military domination. A quick invasion of Cuba because it looks temptingly close to the USA will usually result in a black screen and a message to the effect that WWIII has started and the game is over. The substance of *BALANCE OF POWER* is an excursion into the arts of subtlety and judgement. The algorithms which control each game have been carefully chosen and crafted.

So enough about the simulation, what about the book? The author, Chris Crawford also happens to be the programmer behind *BALANCE OF POWER* and consequently is well qualified to write it. On the surface, the subject matter could easily entice an author into the trap of boring writing. However, with chapter titles like *The Wonderful World of Insurgency* it is clear that the author is determined to avoid this.

The book is aimed at three audiences – purchasers of *BALANCE OF POWER* who have developed a curiosity about geopolitics. The second audience is someone moving from the opposite direction, namely from geopolitics to game playing. The third audience is a reader who is interested in the design of sophisticated computer games and wants to follow the effort in detail.

In the context of the third audience, the history behind the production and release of *BALANCE OF POWER* is provided and quite a tale it is. The basis of an interesting plot lies behind this story and we have to thank both Chris Crawford for his perserverance and Roger Buoy, President of Mindscape for having faith in the product. The book gives the credit to Roger Buoy for the final title although I did like Roger's other suggestion of *That's the Way the Planet Crumbles!*

The main chapters are organised around the central themes of the game – insurgencies, coups d'etat, Finlandisation and crises. These are then structured into a historical background, the algorithms used and finally some colourful and historical anecdotes related to the topic. The appendix provides a game at Expert level as played by the author, complete with comments and justification for his decision making.

This structure makes for a well-balanced, easily assimilated book. The attention to detail that makes *BALANCE OF POWER* such a potent game has clearly been applied to this book. Although a programmer, I think that Chris Crawford would find ready employment in the higher reaches of the State Department or the Foreign Office. His knowlege of history and geopolitics is not over-reached by his obvious enthusiasm. He makes no bones about the shortcomings of computer simulations and *BALANCE OF POWER*. Indeed, he goes to some length to justify why he regards *BALANCE OF POWER* as a game, and not a simulation.

One of the few books that comes under the heading of computers that can be picked up and re-read many times. Essential reading for owners of *BALANCE OF POWER* and a work of reference to any games designer.

Title: Balance of Power International Politics as the Ultimate Global Game
Author: Crawford C.
ISBN: 0-914845-97-7
Publisher: MicroSoft Press
UK Price: £8.95 ***B.D.***

SPECIAL RESERVE

You too could be buying games at half price!

If you take your games seriously you want the **best** games at the **best** prices. Special Reserve selects **the latest, the most advanced, the greatest** games and "gives" them to members at **half price** (some at a lot less) plus post and packing. We also offer our members some good deals on utilities, like the superb **Photon Paint** - £34.99 through us.

Members get a membership card and three issues (Summer, Christmas and Spring) of our professionally prepared **Buyers Guide**. Every time you buy a game from us, you get the current update to your Buyers Guide - and we even provide a binder for you to keep them all in.

It costs just £4.00 (UK) or £5.00 (other E.E.C. countries) to join Special Reserve. **Half price** is our "normal" price. Almost all of our games, even the latest games, are at half price and some are at huge savings. A small selection from our Buyers Guide appears below.

Here's the catch. Post and packing costs £1.50 per item if you order by post (add that to the price of our games to find out if we are still the cheapest) or £2.50 if you order by phone, or £3.00 if you live outside the UK.

Here's the bonus. We'll give you your membership fee back if you join our other club, **Official Secrets** within one month (details with your membership pack). Official Secrets is a club that gives you much more, including **Confidential** (a professional quality bi-monthly magazine about state-of-the-art games), a **free game** when you join **and** an exclusive **Magnetic Scrolls** mini-adventure. That's right exclusive! At this very moment top adventure writers Magnetic Scrolls (*The Guild of Thieves* etc) are writing a mini-adventure specially for Official Secrets members. It won't be in the shops, it will be a collector's item and it's free with issue 2 of Confidential. (Send us an S.A.E. for full details on Official Secrets)

Special Reserve Example Price List

(Members only - plus post and packing)

Photon Paint	**(£69.99)**	**£34.99**
Corruption	**(£24.95)**	**£12.47**
Mindfighter	**(£24.99)**	**£12.49**
Aaargh!	**(£19.99)**	**£9.99**
The Three Stooges	**(£29.99)**	**£14.99**
The Sentinel	**(£19.95)**	**£9.97**
Barbarian (Palace)	**(£24.99)**	**£12.49**
Faery Tale	**(£24.99)**	**£12.49**
Sherlock	**(£24.99)**	**£12.49**
Beyond Zork	**(£24.99)**	**£12.49**
Bubble Bobble	**(£19.95)**	**£9.97**
Balance of Power	**(£29.95)**	**£14.97**
Defender of the Crown	**(£29.95)**	**£14.97**
Starglider	**(£24.95)**	**£12.47**
Time & Magik	**(£19.95)**	**£9.97**
Uninvited	**(£26.95)**	**£13.47**
The Guild of Thieves	**(£24.95)**	**£12.47**
Deja Vu	**(£29.95)**	**£14.97**
SPECIAL OFFERS!		
Golden Path	**(£19.95)**	**£6.95**
Silicon Dreams	**(£19.95)**	**£6.95**

And here's the small print: we don't accept members from outside the E.E.C. You can't buy any games unless you join, but you can buy them at the same time as joining. All titles are subject to availability. We try to despatch your order the day we receive it, but can't promise to get your game to you in less than 7 days. New releases can be ordered in advance and will be sent on the day we receive supplies.

MEMBERSHIP APPLICATION & ORDER FORM

Complete this coupon or write the details clearly on a sheet of paper or phone our New Members Department on 0279 600204

NAME _____

ADDRESS _____

_____ POST CODE _____

COMPUTER [ ] *delete where not applicable *DISK: 5.25"/3.5"/3"/*TAPE

SPECIAL RESERVE I'd like to buy a game as well (optional)	UK £4.00 or EEC £5.00	£
TITLE _____	PRICE	£
Post & Packing per game	£1.50 UK or £3.00 EEC	£
Orders from outside the UK must be paid by credit card	TOTAL	£

*delete where not applicable

Payment by Cheque*/Postal Order*/Visa*/Access*/American Express*

My credit card number is: Name and address must be as above

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

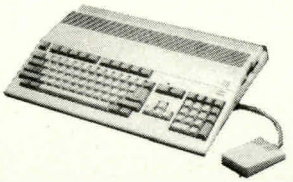
SIGNATURE _____ EXPIRY DATE _____

Cheques or Postal Orders payable to:
SPECIAL RESERVE,
Dept AUI, PO BOX 847, HARLOW CM21 9PH

Special Reserve and Official Secrets are trading names of Inter-Mediates Ltd. Registered in England Number 2054713.

AMIGA SYSTEMS

Commodore A500 computer	£399.00
Defender of the Crown	£29.95
DELUXE PAINT	£90.85
Goldrunner	£24.95
Karate Kid II	£24.95
Starglider	£24.95
10 Public Domain disks	£49.50
Mouse mat	£7.55
SYSTEM VALUE	£651.70



OUR ABSOLUTELY SPECIAL SYSTEM PRICE: ONLY £389 inclusive of VAT!

Special Offer with A501 (512K extra RAM and Clock) **£479.00**
Special Offer with A501 and FD200A (second drive) **£549.00**
P&P **£7.00**, 24-hours Interlink courier service **£10.00**

Special Offer:

12" MONOCHROME MONITOR, ideal for wordprocessing/programming, ONLY **£39** when bought with any Amiga system.

UPGRADES:

AMIGA TV modulator **£21.95**, AMIGA Second double disc drive **£79.95**, A501-512K RAM and Clock **£100.00**, AMIGA Teletext and TV adapter **£89.95**, 1084 COLOUR MONITOR **£249.95**, Brother Daisy wheel printer **£129.00**, Panasonic KP1081 NLQ dot matrix **£159.00**, Fish discs (Public Domain software) **£5.00**, Commodore Business software pack, wordprocessor, spreadsheet, database **£99.00**.

Send to:
Solidisk Technology Limited,
17 Sweyne Avenue,
Southend-on-Sea, Essex SS2 6JQ

NAME: .....

Address: .....

.....

.....

.....

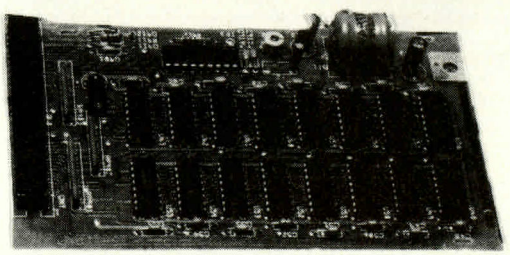
Items: .....

ACCESS/VISA: .....

SOLIDISK
17 Sweyne Avenue
Southend-on-Sea
Essex SS2 6JQ
Open Mon-Sat 9.00am to 5.30pm
Tel:
(0702)
354674

Commodore® AMIGA® 501

Memory and Clock Expansion Cartridge



ONLY £99.00 INC!

Post free

SOLIDISK

WHY PAY MORE at your local computer store when we can deliver to your door, **AND FAST?**

Enlightenment: Druid II

Firebird

Firebird's Druid, originally released on the 64 was well received as one of the first Gauntlet variants. Now the sequel has arrived, but has it missed the boat?

It was one hundred and three years ago that Hasrinaxx the druid banished Acamantor from the land of Belorn. After a long break to regain his strength, he is back raising the walking undead and turning the animals of the forest against the villagers. You saw him off once and you intend to do it again. Explore the fifteen levels and seek out the white orb to rid the Earth of Acamantor for good.

Hasrinaxx starts off with a handful of spells to help him on his way. Circular icons on the ground can be collected and placed in your spell book. Some can give magical armour, others can create a protective wall of fire or water. One of the most interesting carried over from the original is the elemental spell, which conjures up one of three types of servants. These can either be controlled by you or a second player, though controlling them yourself is very awkward. This introduces a variation on the standard two player mode found in Gauntlet, in which the second player acts as a bodyguard to Hasrinaxx.

'One of the most interesting, carried over from the original is the elemental spell, which conjures up one of three types of servants.'

Among others, zombies, spiders and blobs pop up from the undergrowth of the multi-directional scrolling lands. A shot or two from your finger sends them back. Most of the enemies are badly lacking in imagination and character. Spiders and wobbling slime-blobs are hardly original. Most of the sound effects are coarse crunches and bangs, with a few grunts and gulps here and there. A long but repetitive piece of music using sampled instruments is entertaining for a while but the "music off" option is a welcome inclusion.

Enlightenment makes use of machines with over half a megabyte by loading in more of the game at the start, reducing the amount of loading during the game.

Most of the trouble with Enlightenment is just that it uses a very tired game style. It is not a simple clone of Gauntlet but the gameplay is very similar, only somewhat slower moving. Would-be Merlins could find something here to please them, but most of us have done this all before. Games of this style have largely been put out to pasture by now, but newcomers who have not played one might want to take a look.

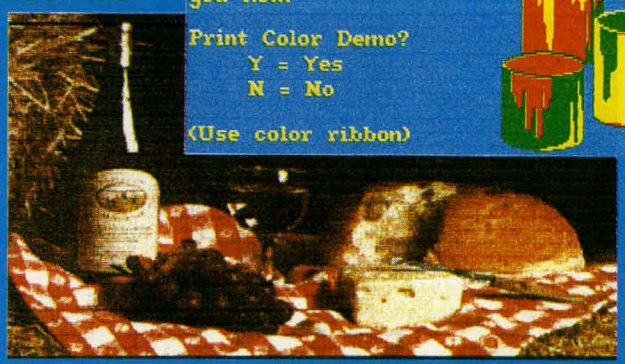
T.H.

Graphics: 7
Sound: 7
Playability: 6
Value: 6
Price: £19.95

Graduate from black and white to Colour!

OKIMATE 20

The OKIMATE 20 colour printer is unique. No other printer can equal its quality black and white and full colour printing at such an incredibly low price. The Okimate 20's outstanding specifications speak for themselves!



- Prints colour or black and white
- 80 cps data processing quality
- 40 cps correspondence quality
- Expanded/condensed print, superscript, subscript, italics and underlining
- 80 columns with standard characters
- 132 columns with condensed characters
- 24 element long-life print head with snap-in replacement — no tools needed
- Up to 10 national character sets
- Pica and Elite fonts in correspondence quality mode
- High resolution 144 x 144 dpi graphics
- Plain paper, thermal paper or acetate transparencies
- Friction and variable width pin-feed handling
- "Clean hands" cartridge ribbon
- Personality modules: standard parallel, RS232C serial and IBM parallel
- 8k buffer for simultaneous receive and print
- 64 downline loadable characters
- Ultra compact and very low weight

As a special offer exclusive to readers, Amiga User Interntional Magazine is able to offer the OKIMATE 20 at only £159.85 (inc. V.A.T & P&P).
Even at this amazingly affordable price, the OKIMATE 20 is supplied complete with a free starter pack of ribbons and paper and it comes with 1 year's warranty. Amiga User International invites you to move into a dazzling colour dimension with the OKIMATE 20.

ONLY £159.85 INCLUDING VAT & P+P

To Amiga User International, 40 Bowling Green Lane London EC1R 0NE
Please send me ☐ OKIMATE 20's at the special AUI price of £159.85 each.
Please tick AMIGA ☐ or PC compatible ☐ PRINTER CABLE £15.95 (inc. VAT and p&p)
Please make cheques payable to Croftward Limited. Or debit my ACCESS account

Name
Address
Tel:

Please allow 28 days for delivery. Offer available to UK and Eire readers only.

MENTOR

AMIGA PROGRAMMING

Are your Gadgets mutually exclusive? No . . . Paul Andreas Overaa explains.

Gadgets are sometimes needed which, although freely selectable, have the property that the selection of any one gadget automatically de-selects any previous selection. One example of this would be a game which uses 'toggled boolean gadgets' to allow users to select various parameters, such as the level of playing difficulty, by offering a range of gadgets covering the different levels. At other times you may need to 'lock' members of a gadget set, i.e. create the situation whereby the selection of any one gadget from the set prevents the selection of any of the remaining gadgets until such time as the selected gadget is 'de-selected' by either the user or the program itself.

At the time of writing Intuition does not automatically support mutual exclusion in Gadget sets. It does however contain routines that enable an applications program itself to manipulate a window's gadget list. This month we will look at three useful routines and give you an example of their use:

AddGadget (window p, gadget p, position) . . . this returns the gadget's position in the list.

RemoveGadget (window p, gadget p) . . . routine returns the position of the removed gadget, or −1 if it could not be found.

window p . . . is a pointer to the window that contains the gadget.

gadget p . . . is a pointer to the target gadget.

position . . . an integer which tells Intuition whereabouts in the gadget list the gadget should go.

AddGadget () and RemoveGadget () do NOT affect the display. To do this another routine, RefreshGadgets (), must be used:

RefreshGadgets (gadget p, window p, requester p) . . . this redraws the gadget list display. (Note: requester p . . . is a pointer to a requester. If you are not dealing with a requester gadget all you have to do is set the requester pointer to NULL.)

Intuition's Gadgets are defined by a group of variables which, as a C structure, can be represented like this:

```
struct Gadget
struct Gadget *NextGadget; /* Pointer to next gadget in list */
SHORT LeftEdge, TopEdge; /* Next four variables describe the */
SHORT Width, Height; /* location/ dimensions of the select box */
USHORT Flags; /* Highlighting, positioning & state flags */
USHORT Activation; /* Flags to determine gadget behaviour */
USHORT GadgetType; /* Identifies the gadget type */
APTR GadgetRender; /* Pointer to an 'unselected' Image structure */
APTR SelectRender; /* Pointer to a 'selected' Image structure */
struct Intuitext *Text; /* Pointer to gadget text if any */
LONG MutualExclude; /* Not currently implemented */
APTR SpecialInfo;
USHORT GadgetID; /* These last two fields are ignored by */
APTR UserData; /* Intuition – used just for our data */
```

Various items in a gadget structure may be altered but, to do this safely, certain rules should be adhered to. The most important of such rules is that you should remove a gadget from the window's 'gadget list' BEFORE you edit any characteristics that Intuition may be monitoring. Once the necessary changes have been made the gadget can be added back into the gadget list.

One of the gadget Flags that is monitored and adjusted by Intuition is the SELECTED flag. Sixteen bits are used in the gadget structure for such flags and the bit corresponding to 0080hex (C equivalent is 0x0080) is the one that Intuition uses to tell whether the gadget is on or off. The Intuition header file makes the appropriate definition of SELECTED and so to turn a gadget on or off we do this: we remove the gadget from the list, adjust the SELECTED bit, add the gadget back into the list and finally update the gadget display.

Under certain circumstances an approach, based on Intuition Requesters, may also be used to automatically block the selection of gadgets at a certain operational level. The technique relies on the fact that when a requester is put up in a window ALL further input to that window is blocked until the requester is satisfied but . . . during this time any requester gadgets that have been brought up can receive information as per normal.

The ideas involved are probably best explained using an example, so here is one which covers most of the elements we have been looking at. The code comes from the gadget handler routine of a 'Brush to Image' converter utility. Its object is to enable a user to load IFF 'brushes', decompress and de-interleave the bitplanes etc. and store the resulting data as a combined Image structure/ Image data set. This data can then be incorporated into the graphic displays of other programs. The program loads as a full screen size window display (see figure 1). At the top of the display four gadgets provide the following options:

A) Read files into a buffer.
B) Show, i.e. analyse the buffer contents and decode them (if possible), building the equivalent Image data.
C) Save the decoded buffer contents as combined Image structure/Image data blocks, and lastly
D) Exit from the program.

A main 'controller routine' monitors the gadgets relating to the highest level of gadget operations. The gadgets being used are boolean gadgets with the TOGGLESELECT flag set in the activation flags field (this produces gadgets that turn on when you click on them the first time and turn off when you click on them again). As soon as a gadget from the main menu is hit the address of the gadget is passed to the gadget handling module described in the program listing.

The first job of this module is to identify which gadget has been hit. This is easy to do because suitable values have been set up in the GadgetID field for each of

the four gadget structures, i.e. the header file containing the Gadget structure data contained #define statements which give numeric values to the labels READ, SHOW, SAVE and EXIT shown in the highest level case statement of the gadget handler. The Gadget structure's user field, 'GadgetID', is available especially for such purposes.

The variable passed to the gadget handler is a pointer to a Gadget structure. The name of this pointer is 'gadget' so in the code gadget–>GadgetID refers to the gadget's identification number. A case statement uses this number to select the appropriate function to perform. Each option, when selected, results in a requester being created as an inner window of the main display (in figure 2 the EXIT option has been selected). Each is so designed that it contains all the necessary gadgets/text etc. When displayed it becomes the 'work area' of that particular option, effectively preventing the user from selecting (or deselecting) any of the four main gadgets even though they are still present as part of the screen display.

When an option is selected, the requester is produced which displays or collects the necessary information. During this time the gadget relating to the selected option is 'on', i.e. in the selected state. Once the necessary function has been completed two things must happen: Firstly, the program needs to return to an 'active main gadget menu' state . . . this happens automatically when the requester terminates so we do not actually need to worry about this. Secondly, we must get the gadget that had been selected . . . 'back into its un-selected state' and to do this we modify the gadget's SELECTED flag. Once this has been done the gadget handler gives control back to the main program.

The main program, incidentally, has only a few basic jobs. It opens the resources needed, creates the display and then enters a wait loop which puts the program to sleep until user 'does something interesting', i.e. it waits for a user to hit one of the gadgets in the main gadget menu.

To finish, here are the relevant parts of the C source. I have included all the code for the first section of the gadget handler but only the code for the EXIT option is provided since the code for the other three options all follow a similar 'look at any Intui-messages while you do something' arrangement.

P.A.O.

```
/* ========================================================================== */
/* Title:              Gadget Handling Module                                 */
/* Ref:                                                                       */
/* Date:               27th March 1988                                        */
/* Programmer:         Paul Andreas Overaa                                    */
/* -------------------------------------------------------------------------- */

void gadget_hit(gadget)

struct Gadget *gadget; /* routine is passed the address of a gadget */

{

void read_file_option(),show_file_option(),save_file_option(),exit_option();

WORD position;

switch(gadget->GadgetID)
                    {
                    case READ: read_file_option();break;

                    case SHOW: show_file_option();break;

                    case SAVE: save_file_option();break;

                    case EXIT: exit_option();break;

                    default: if (DEBUG) printf("unrecognized gadget case \n");
                     }

position=RemoveGadget(window,gadget);    /* take gadget out of list    */

gadget->Flags=gadget->Flags^SELECTED;    /* change SELECTED flag       */

AddGadget(window,gadget,position);       /* put gadget back into list */

RefreshGadgets(gadget,window,NULL);      /* show it's true state       */

}

/* -------------------------------------------------------------------------- */
```

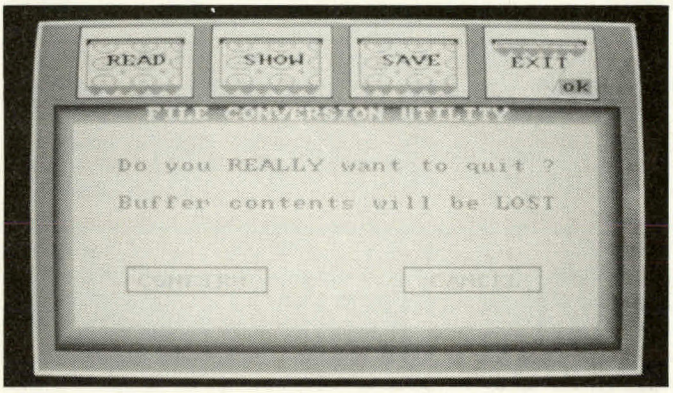


Fig 1

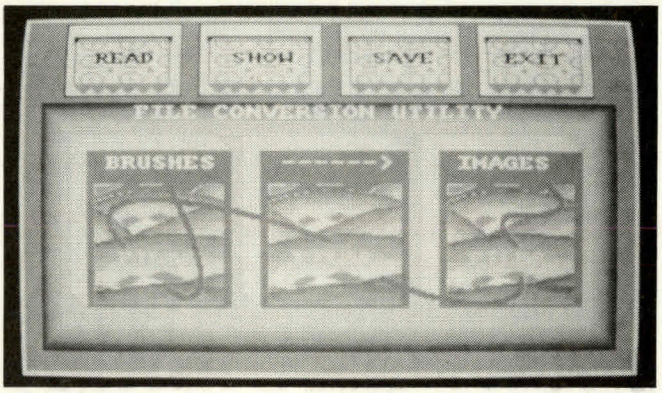


Fig 2

```
void exit_option()

{

BOOL Request(),exit_flag=FALSE;
struct IntuiMessage *message, *GetMsg();

struct Gadget *gadget;
ULONG class; APTR object;


if(Request(&Requester01,window)==FALSE)
  {global_exit_flag=TRUE;if(DEBUG){printf("cannot open EXIT requester \n");}}

   else { do{ Wait(1<<window->UserPort->mp_SigBit); /* Wait for message */

            message=GetMsg(window->UserPort);

            do{

             class=message->Class;                /* Copy the data for our */
             object=message->IAddress;            /* use so we can QUICKLY */
             ReplyMsg(message);                   /* tell Intuition that   */
                                                  /* we have taken it.     */

             switch(class) {

                    case GADGETUP:

                            gadget=(struct Gadget *)object;
                            if(gadget->GadgetID==REQUESTER_YES){global_exit_f
lag=TRUE;}
                            exit_flag=TRUE; /* either of  the  two  responses
will do */
                            break;

                    default:  if(DEBUG)  printf("unrecognized  EXIT  requester
case \n");

                          }

                if(exit_flag==TRUE) {message=NULL;}
                else{message=GetMsg(window->UserPort);}

              }while(message);

            }while(!exit_flag);

       }
}

/* ========================================================================== */
```

SOFTWARE AND PERIPHERALS LATEST AVAILABILITY LIST

This latest availability list shows the growing quantity of software and peripherals for the AMIGA. It has been compiled by AMIGA User with the valuable collaboration of leading distributors. We are very grateful for the special help we have received from Hobbyte Ltd. Prices include VAT, where necessary and may, of course, be subject to change. Consult your dealer for price confirmation.

Product	Company	Price
1. Communications		
A Talk Plus	Megasoft	£89.95
BBS PC	Micro-Systems Software	£99.95
Dialtext Comms Pack	Dialtext	£29.00
Diga!	Aegis	£57.00
Digital Link	Digital Creations	£65.00
Maxicomm	Maxisoft	£49.95
Online!	Micro-Systems Software	£39.95
Ruby-Comm	Y2	£90.00
Ruby-View & VT Emulator	Y2	£172.00
WS 4000 Modem	Miracle Technology	£189.00
2. Publishing/Printing		
Home Publisher	Hi Tec	£24.95
Page Setter	Gold Disk	£115.00
City Desk	Sunrise	£115.00
Excellence!	Micro-Systems Software	£199.95
Page Setter Laserscript	Gold Disk	£34.95
Professional Page	Gold Disk	£349.95
ProWrite	New Horizons	£75.00
ProWrite 2.0	New Horizons	£85.00
Publisher Plus	Notheast Software	£69.95
Shakespeare	Infinity	£143.75
3. Graphics and Video		
Analytical Art	Crystal Rose	£69.95
Animation Effects	Hash Enterprises	£35.00
Animation Stand	Hash Enterprises	£35.00
Animator Apprentice	Hash Enterprises	£199.95
Animator Apprentice Junior	Hash Enterprises	£56.95
Animator Junior Library - Blocks	Hash Enterprises	£56.95
Animator Junior Library - Geometrics	Hash Enterprises	£56.95
Animator Junior Library - Flipper	Hash Enterprises	£56.95
Animator With Images	Aegis	£103.50
Artpak	Aegis	£44.95

Butcher II	Eagle tree Software	£27.00
Calligrapher	Interactive Softworks	£55.00
Deluxe Arts Parts	Electronic Arts	£9.95
Deluxe Paint	Electronic Arts	£39.95
Deluxe Paint Art & Utility Disk	Electronic Arts	£29.95
Deluxe Paint II	Electronic Arts	£69.95
Deluxe Print	Electronic Arts	£74.95
Deluxe Productions	Electronic Arts	£149.00
Deluxe Video 1.2	Electronic Arts	£69.00
Digi-paint	NewTek	£59.95
Digipic	Precision Software	£299.00
Digi-Paint	NewTek	£59.95
Digi-View 2.0	NewTek	£170.00
Express Paint	PAR Software	£69.95
Fantavision	Broderbund Software	£34.95
Forms in Flight	Micro Magic	£60.00
Grabbit	Discovery	£29.95
Graphics Studio	Prog. Peripherials	£59.95
Images	Aegis	£27.95
Impact	Aegis	£63.25
Karafont Textured fonts	Kara	£59.95
Page Flipper	Mindware	£45.00
Perfect Vision - Video Digitiser	SunRize Industries	£199.00
Photon Paint	Microillusions	£99.95
Pixmate	Prog. Peripherials	£49.95
Prism Plus Paint	Prism	£59.95
Pro Video CGI Titler	JDK	£179.95
Pro Video Font Library	JDK	£89.95
Sculpt 3D	Byte	£79.95
The Director	The Right Answers Group	£47.00
TV*Show	Zuma Group	£69.95
TV*Text	Zuma Group	£69.95
Video Titler	Aegis	£65.00
Videoscape 3D	Aegis	£143.75
Zuma Fonts 1,2,3	Zuma Group	£26.00

4. Leisure

Aaargh	Melbourne House	£19.99
A Mind Forever Voyaging	Infocom	£34.95
Archon	Ariolasoft	£29.95
Arctic fox	Ariolasoft	£29.95
Arena Sports Simulation	Psygnosis	£29.95
Arkanoid	Discovery	£24.95
Armageddon Man	Martek	£19.95
Army Moves	Imagine	£24.95
Bad Cat	Euro Gold	£24.95
Backlash	Novagen	£19.95
Balance Of Power	Mindscape	£29.95
Ball Raider	Diamond	£19.95
Bally Hoo	Infocom	£29.95
Barbarian	Palace	£24.95
Barbarian	Psygnosis	£24.95
Battleships	Elite	£19.99
Blackjack Academy	Microillusions	£29.95
Black Shadow	CRL	£19.95
Blasterball	Mastertronic	£9.99
Bone Cruncher	Superior	£14.95
Borrowed Time	Activision	£24.95
Brainstorm	King Size	£9.95
Bratticus	Psygnosis	£24.95
Brian Clough's Football Fortunes	CDS Software Ltd	£14.99
Bureaucracy	Infocom	£34.95
Casino Roulette	CDS Software Ltd	£19.95
Championship American Football	Gamestar	£24.95
Championship Baseball	Gamestar	£24.95
CHampionship Golf	Gamestar	£34.95
Chessmaster 2000	Software Country	£29.95
Crazy Cars	Titus	£24.95
Cruncher Factory	Anco	£9.95
Dark Castle	Mirrorsoft	£24.99
Deep Space	Psygnosis	£24.95
Defender Of The Crown	Cinemaware	£29.95
Deja Vu	Mindscape	£29.95
Delta Patrol	Other Valley	£24.95
Demolition	Anco	£9.95
Destroyer	Epyx	£24.95
Diablo	Unicorn	£24.95
Dreadnought	Melbourne House	£19.99
Dr. Fruit	Anco	£9.95
Dungeon Construction	Microillusions	£39.95
Earl Weaver Baseball	Electronic Arts	£29.95
Ebonstar	Microillusions	£39.95
ECO	Ocean	£24.95
Emerald Mine	Anco	£9.95
Enlightenment Druid II	Firebird	£19.95
Faery Tale	Microillusions	£29.95
Ferrari Formula One	Electronic Arts	£24.95
Feud	Mastertronic	£9.99
Final Trip	Anco	£9.95
Fire Power	Microillusions	£24.95
Flight Path 737	Anco	£9.95
Flight Simulator II	Sublogic	£49.95
Flight Simulator II Scenery Disk 7	Sublogic	£24.95
Flight Simulator II Scenery Disk 11	Sublogic	£24.95
Frost Byte	Micro-Value	£14.95
Galactic Invasion	Microillusions	£24.95
Garrison	Rainbow Arts	£24.95
Gettysburg The Turning Point	SSI	£29.95
GFL Championship Football	Gamestar	£24.99
Golden Path	Firebird	£19.95
Goldrunner	Microdeal	£24.95
Grand Slam Tennis	Infinity	£29.95
Grid Start	Anco	£9.95
Guild of Thieves	Rainbird	£24.95
Gunship	Microprose	£39.95
Hacker	Activision	£24.95
Hacker II	Activision	£24.95
Hardball	US Gold	£24.95
Hitchikers Guide To The Galaxy	Infocom	£29.95
Hollywood Hijinks	Infocom	£29.95
Hollywood Poker	Diamond Games	£19.95
Impact	Audiogenic	£14.95
Insanity Fight	Microdeal	£24.95
Interceptor	Electronic Arts	£24.95
Into The Eagles Nest	Pandora	£19.95
Jewels of Darkness	Rainbird	£19.95
Joe Blade	Players	£9.95
Kampfagruppe	SSI	£29.95
Karate Kid II	Microdeal	£24.95
Karate King	Anco	£9.99
Karting Grand Prix	Anco	£9.95
Kikstart II	Mastertronic	£9.99
King of Chicago	Mirror Soft	£29.95
Kings Quest	Sierra	£29.95
Knight Orc	Rainbird	£19.95
Land of Legends	Microillusions	£49.95
Las Vegas	Anco	£9.95
Leaderboard	Access	£24.95
Leaserboard Add-on T	Access	£9.95
Leather Goddesses Of Phoebus	Infocom	£34.95
Little Computer People	Activision	£34.95
Marble Madness	Electronic Arts	£19.95
Mean 18 Golf	US Gold	£29.95
Mercenary	Novagen	£24.95
Metallica	Mastertronic	£9.99
Metropolis	Melbourne House	£19.99
Micro League Baseball	Micro League	£59.95
Mike The Magic Dragon	Anco	£9.95
Mindshadow	Activision	£24.95
Moebius	Origin	£25.95
Moon Mist	Infocom	£29.95
Mousetrap	Tynesost	£14.95
Nikademus	SSI	£24.95
Ninja Mission	Mastertronic	£9.99
Ogre	Origin Systems	£24.95
One On One	Ariolasoft	£29.95
Passengers on the Wind	Infrogrammes	£24.95
Pawn	Rainbird	£24.95
Phalarx	Anco	£9.95
Pinball Wizard	Kingsoft	£19.95
Pink Panther	Gremlin	£19.99
Planetfall	Infocom	£29.95
Plutos	Tynesoft	£14.95
Pool	Mastertronic	£9.99
Portal	Activision	£24.95
Ports of Call	Aegis	£24.95
Power Play	Arcana	£19.95
Power Struggle	P.S.S.	£14.99
Q Ball	English Software	£19.95
Racter	Mindscape	£36.00
Revenge II	Mastertronic	£9.99
Roadwars	Melbourne House	£19.99
Roadwar Europa	S.S.I.	£24.95
Roadwar 2000	S.S.I.	£29.00
Rockford	Melbourne House	£19.99
Rogue	Epyx	£27.00
Rogue	Mastertronic	£9.99
Romantic Encounters at the Dome	Microillusions	£39.95
S.D.I.	Cinemaware	£29.95
Seconds Out	Tynesoft	£19.95
Seven Cities Of Gold	Ariolasoft	£29.95
Shadowgate	Mindscape	£24.00
Sidewinder	Mastertronic	£9.99
Silent Service	Microprose	£24.95
Sinbad	Cinemaware	£29.95
Sky Fighter	Anco	£14.95
Skyfox	Ariolasoft	£29.95
Slap Fight	Imagine	£24.95
Slaygon	Microdeal	£19.95
Space Battle	Anco	£9.95
Space Quest	Sierra	£29.95
Space Ranger	Mastertronic	£9.99
Star League Baseball	Gamestar	£29.95
Starray	Logotron	£24.95
Star Fleet 1	Interstel	£24.95
Star Wars	Domark	£19.95
Stellar Conflict	PAR Software	£24.95
Stock Market	Tynesoft	£19.95
Strip Poker II+	Anco	£9.95
Super Huey	Cosmi	£19.95
Temple Of Apshai Trilogy	Epyx	£24.95
Terramex	Grand Slam	£19.95

Terrorpods	Psygnosis	£24.95
Test Drive	Electronic Arts	£24.95
Thai Boxing	Anco	£9.95
The Haley Project	Epyx	£44.95
The Hunt For Red October	Grand Slam	£24.95
The Pawn	Rainbird	£24.95
The Surgeon	Amisung	£49.95
Thexder	Sierra	£14.99
Three Stooges	Mirrorsoft	£24.95
Time Bandit	Microdeal	£24.95
Trinity	Infocom	£34.95
Uninvited	Mindscape	£29.95
Vader	Anco	£9.95
Vampires Empire	Magic Bytes	£19.95
Video Vegas	Baudville	£29.85
Vyper	Top Down	£19.95
Winnie The Pooh	Sierra On-Line	£24.95
Winter Games	Epyx	£29.95
Winter Olympiad	Tynesoft	£19.95
Wishbringer	Infocom	£29.95
Wizball	Ocean	£24.95
Wordplex	PAR Software	£24.95
World Darts	Mastertronic	£9.99
World Games	Activision	£24.95
Xenon	Melbourne House	£19.99
XR35	Anco	£9.95
Zoom	Discovery	£19.95
Zork I	Infocom	£29.95
Zork II	Infocom	£29.95
Zork III	Infocom	£29.95

5. Business

A Filer	Megasoft	£49.95
Acquisition 1.3	Taurus Impex	£249.95
Amiga Accounts	Total Office	£149.95
AmigaCalc	Commodore	£79.95
Analyze!	Micro-Systems Software	£69.95
B.E.S.T. Business Management	Business Electronics	£399.00
Business Accounts 1	Panmead	£166.75
Business Accounts 2	Panmead	£166.75
DataRetrieve	Abacus	£49.95
dB Man	Verasoft	£149.95
Dynamic Word	Microillusions	£199.95
Excellence!	Micro-Systems Software	£199.95
File II	Softwood	£99.95
Gold Spell II	Gold	£29.95
Hal Calc	Hal	£59.95
Hippo Word	Hippo	£189.95
Integrated Accounts	Eidersoft	£114.95
Kindwords	The Disc Company	£49.00
KSpread II	Kuma	£79.95
Logistix	Grafox	£95.00
Math-Amation	Prog. Peripherals	£69.95
Maxidesk	Maxisoft	£69.95
Maxiplan 500	Oxxi Inc.	£99.95
Maxiplan Plus	Oxxi Inc.	£149.95
Microfiche Filer	Software Vision	£99.95
Office	Interlex	£49.95
Organize!	Micro-Systems Software	£49.95
Outline	Micro-Systems Software	£39.95
Promise	Robtek	£39.95
ProWrite	New Horizons	£75.00
Scribble!	Micro-Systems Software	£49.95
Softwood File II	Softwood Company	£69.95
Superbase Personal	Precision	£99.95
Superbase Professional	Precision	£249.95
Talker Word Processor	Finally	£42.15
Textcraft	Commodore	£44.95
TextPro	Abacus	£57.45
The Works	Micro-Systems Software	£149.99
Unicalc	Lattice	£69.95
VIP Professional (1-2-3 Clone)	Ditek	£139.95
Vizawrite (Desktop)	Viza Software	£99.95
Wordperfect 4.1	Sentinel Software	£228.85
Write & File	Softwood Company	£69.95

6. Utilities and Languages

64 Emulator	ReadySoft	£69.95
A/C Basic	Absoft	£195.00
A/C Fortran 77	Absoft	£235.00
Airt Language	PDJ	£55.00
APL Programming Language	Micro APL	£264.50
AssemPro	Abacus	£49.95
Aztec C Professional	Manx	£199.00
Aztec C Developers	Manx	£299.00
Aztec C Commercial	Manx	£499.00
Benchmark Modula-2	Oxxi Inc	£199.95
CLImate	Prog. Peripherals	£34.95
Cambridge Lisp	Metacomco	£149.95
dBase III ISAM Package	Lattice	£109.25
Devpac Assembler	Hi Soft	£59.95
Disk-2-Disk	Central Coast Software	£29.95
DOS-2-DOS	Central Coast Software	£39.95
Explorer Dissassembling Debug Monitor	I.A.N	£49.95
FACC II	ASDG	£34.50
Flipside!	Micro-Systems Software	£19.95
Gizmos	Digital Creations	£49.95
GOMF	Hypertek	$34.95
ISO Pascal	Metacomco	£89.95
KSeka Assembler	Kuma	£49.95
Language Plus Runtime System	True Software	£249.94
Lattice C 3.1 Fast Compiler	Lattice	£165.00
Lattice C 3.1 Professional	Lattice	£165.00
Lattice C Compiler	Lattice	£99.95
Lattice C 4.0 (Standard)	Lattice	£143.75
Lattice C 4.0 (Developers)	Lattice	£270.25
Lint	Graymatter	£110.00
Macro Assembler	Metacomco	£60.82
Make	Lattice	£97.75
Marauder 2	Discovery	£39.95
MCC Toolkit With Multi-user Utility	Metacomco	£39.95
Metascope Debugger	Lattice	£75.00
Modula-2	Modula-2	£99.95
Modula-2 Developers Version	Modula-2	£149.95
MS DOS-C Cross Compiler 3.1	Lattice	£373.75
Multi Forth	Creative Solutions	£179.00
Panel Screen Design	Lattice	£145.00
Power Windows 2	Inovatronics Inc	£59.95
Professional Text Engine	Digipro	£49.95
RAM Disc	MicroForge	£24.99
Sam Basic	D.S.	£99.95
Screen Editor	Lattice	£75.00
Shell Enhanced CLI	Metacomco	£49.95
Text Utilities	Lattice	£55.00
True Basic Language	True Software	£69.95
True Basic Runtime System	True Software	£69.95
Turbo Print	IrseeSoft	£29.95
UBZ Forth	UBZ Software	£85.00
Unix Compatible Make	Lattice	£75.00
USCD Pascal - The Power System	Pecan	£79.95
Zing!	Meridian	£49.95

7. Music

Adrum	Bullfrog Productions	£39.95
AudioMaster	Aegis	£44.95
Deluxe Music Construction Set	Electronic Arts	£69.95
Drun Studio	Hi Tec	£39.95
Dynamic Drums	New Wave Software	£69.95
Dynamic Studio	New Wave Software	£129.95
Future Sound	Applied Visions	£170.00
Hot Licks	Infinity	£34.95
Instant Music	Electronic Arts	£29.95
It's Only Rock And Roll	Electronic Arts	£29.95
KCS V1.6 Sequencer	Dr. T	£225.00
Midi Interface	Burocare Systems	£63.25
Music Student I	ACS	£49.95
Music Student II	ACS	£49.95
Music Studio	Activision	£34.95
Music X	Microillusions	£299.95
Perfect Sound	Sunrise Industries	£79.95
Pro Sampler Studio	Datel	£69.95
Sonix	Aegis	£57.50
Soundscape MIDI Interface	Mimetics	£59.00
Soundscape Pro MIDI Studio	Mimetics	£184.99
Soundscape Sound Sampler/Digitser	Mimetics	£124.99
Studio Magic	SunRize Industries	£65.00

8. CAD/CAM/Drawing

Aegis Draw	Aegis	£79.95
Aegis Draw Plus	Aegis	£184.95
Dynamic CAD	Microillusions	£485.00
Intro Cad	Prog. Peripherals	£59.95
PCB Layout	Soft Circuits	£499.00
PCB Logicworks	Capilano	£99.95
PCLO	Soft Circuits	£69.95
Pro Net	Prolific	£475.00
Pro Board	Prolific	£475.00
X-CAD	Taurus	£450.00

9. Other

Business Statistics	Lionheart	£145.95
Decision Analysis	Lionheart	£110.95
Demonstrator	Meridian	£69.95
Discovery	Microillusions	£39.95
Expert System Kit	Exp	£69.95
Flow Ideas Processor	New Horizons	£59.95
Galileo	Infinity	£59.95
Home Control System Starter Pack	MDR	£375.00
Isgur Portfolio	Batteries Inc.	£249.95
Multi-Variate Analysis	Lionheart	£145.95
Portfolio Gold	MDR Interfaces Ltd.	£9.95
Sales And Marketing Forecasts	Lionheart	£145.95
The Planetarium	Microillusions	£69.95

10. Peripherals and Accessories

1 MB Insider expansion (A1000)	Spirit	£373.75
1.5 MB Expansion card (A500)	Spirit	£399.00
2 MB RAM Expansion	Comspec	£595.00
2 MB RAM Expansion	Megaboard	£516.35
32 Bit Turbo Amiga System	CSA	£5,475.00
512 KB expansion/Clock (A500)	Prog. Peripherals	£113.85
68020 14 Mhz CPU Board	CSA	£975.00
68020/68881 Fast/maths Piggyback Board	CSA	£1,480.00
A3 Graphics Tablet	Cherry	£632.00
A4 Graphics Tablet	Anakin	£499.00
Alegra 512K Memory Expansion Board	Access Associates	£230.00
Amiga Dust Cover (A500)	Amiga User	£7.99
Amiga Dust Cover (A1000)	Amiga User	£16.45
Digiclear (captures from video/camera)	Busbyte	£79.00
Digi-Droid	NewTek	£59.95
Digipic 32 level frame grabber	NewTek	£343.85
Digi-View HAM 4096 colour digitiser	NewTek	£179.00
Genlock With Software Utilities	Interactive	£430.00
Genlock (A500/A2000)	Rendale	£299.95
H.A.M. 4096 Colour Digitiser	Digiview	£179.00
High Resolution Flicker Free Monitor	Mitsubishi	£799.00
Jitter Rid For 1081 Monitor	Ideas Created	£19.95
Kickstart Eliminator	Supra	£179.00
Modem Leads	Various	£19.95
Perfect Sound Sampler	SunRize Industries	£70.00
Polaroid Palette And Interface System	Burocare Systems	£1,550.00
Printlink	Trilogic	£30.00
Real Time Clock	Robbyte	£59.90
Sidecar (provides IBM compatibility)	Commodore	£399.00
Teletext Adaptor (UK Model)	Microtext	£143.52
Teletext Adaptor (European Model)	Microtext	£169.50
TV Modulator (A500)	Commodore	£24.95
VD3 Real-time colour video digitiser	Burocare	£914.25

11. Printers

7 Colour Ink Jet Printer	Canon	£499.00
A3 4 Colour Pen Plotter	Hitachi 672	£599.00
A3 6 Colour Pen Plotter	Sektronic SPL 430	£899.00
A4 4 Colour Pen Plotter	Epson H180	£399.00
Epson 24 pin LQ500 Matrix Printer	Epson	£385.00
HP Paintjet Colour Ink Jet Printer	Burocare Systems	£1,144.25
High Quality Colour Printer	Mitsubishi	£4,135.00
Juki 5520 Colour Printer	Juki	£499.00
Laser Printer 300 dpi	Canon LPB8-A1	£2,600.00
Laser Printer 300 dpi	QMS	£1,995.00
Laser Printer 300 dpi Vector Graphics	Canon LPB8-B1	£3,799.00
Okimate 20 Printer With Amiga ROM	Okimate	£199.99
Printer Cable	Busbyte	£19.95
Toner Cartridge (black, brown, blue)	Canon	£86.00
Xerox 4020 Colour Printer	Precision Software	£1,374.25

12. Disk Drives and Storage

10 x 3.5" disks in box	Robbyte	£19.95
30 Mbyte Hard Card (A2000 or Sidecar)	Western Digital	£299.00
3.5" Disk head cleaner	Robbyte	£7.95
External 3.5" Disk Drive	Cumana	£114.95
Supra 20 Mbyte Hard Disk With Clock	Supra	£793.35
Supra 60 Mbyte Hard Disk With Clock	Supra	£1,608.85

13. Books

Advanced Amiga Basic	Compute!	£16.95
Amiga Applications	Compute!	£14.95
Amiga Basic - Inside and Out	Abacus	£16.95
AmigaDOS Manual	Bantam	£24.95
Amiga for Beginners	Abacus	£10.95
Amiga Programmers Guide	Compute!	£14.95
Amiga Programmers Handbook	Sybex	£24.95
AmigaDOS Reference Guide	Compute!	£14.95
Beginners Guide	Compute!	£14.95
Compute!'s First Book Of The Amiga	Compute!	£14.95
Elementary Amiga Basic	Compute!	£12.95
Hardware Reference Manual	Addison Wesley	£23.70
Inside Amiga Graphics	Compute!	£16.95
Inside the Amiga with C	Sams	£19.95
Intuition Reference Manual	Addison Wesley	£23.70
Modula-2 Seafarers Guide/Shipyard Man	Addison Wesley	£16.30
Presenting The Amiga	First Publishing	£9.95
Programmers Guide to the Amiga	Sybex	£24.95
ROM Kernal Reference Manual I Exec	Addison Wesley	£23.70
ROM Kernal Reference Manual II	Addison Wesley	£33.20
The Amiga	Microsoft	£16.95
The Amiga Handbook	Sunshine	£15.95
The Amiga System	Precision	£9.95

F-BASIC

continued from page 72

are quite good but some more complex programs would have been useful.

A more serious concern and one that makes F-BASIC totally unacceptable to me as a programming tool, is the license agreement. You are forbidden to sell any program compiled with F-BASIC unless you register it and a fee of ten dollars is payable FOR EACH PROGRAM REGISTERED. You can, however, give programs away or place them into the the public domain although SHAREWARE must be registered and a fee paid. I cannot help wondering what I would get for my ten dollars?

In practise I found that the best way to use the compiler was to put it and the library into the RAM: disk device and compile from there. To help speed things up, F-BASIC will default to the name TEST if you enter no filename. I found myself using this method after a very short time, a quick edit and F-BASIC would produce the run time file in a few seconds. When I had a working file, I copied it across to my working disk. The method that I ended up using was to open three windows, one running ED (F-BASIC does not provide an editor environment) another for compiling and a third for run time testing.

To get some idea of the speed of the compiler in operation I used a simple Mandelbrot plotting program. The screen limits were 640 by 200 points and all other windows were closed, only leaving open the CLI from which the program was run. The timings were as listed below and as a comparison the timings for AmigaBASIC and AC BASIC are also given. The programs are as identical as I could make them given the limitations of each system.

"the F-BASIC program ran 25% faster than the AC BASIC version and the compile time was much faster."

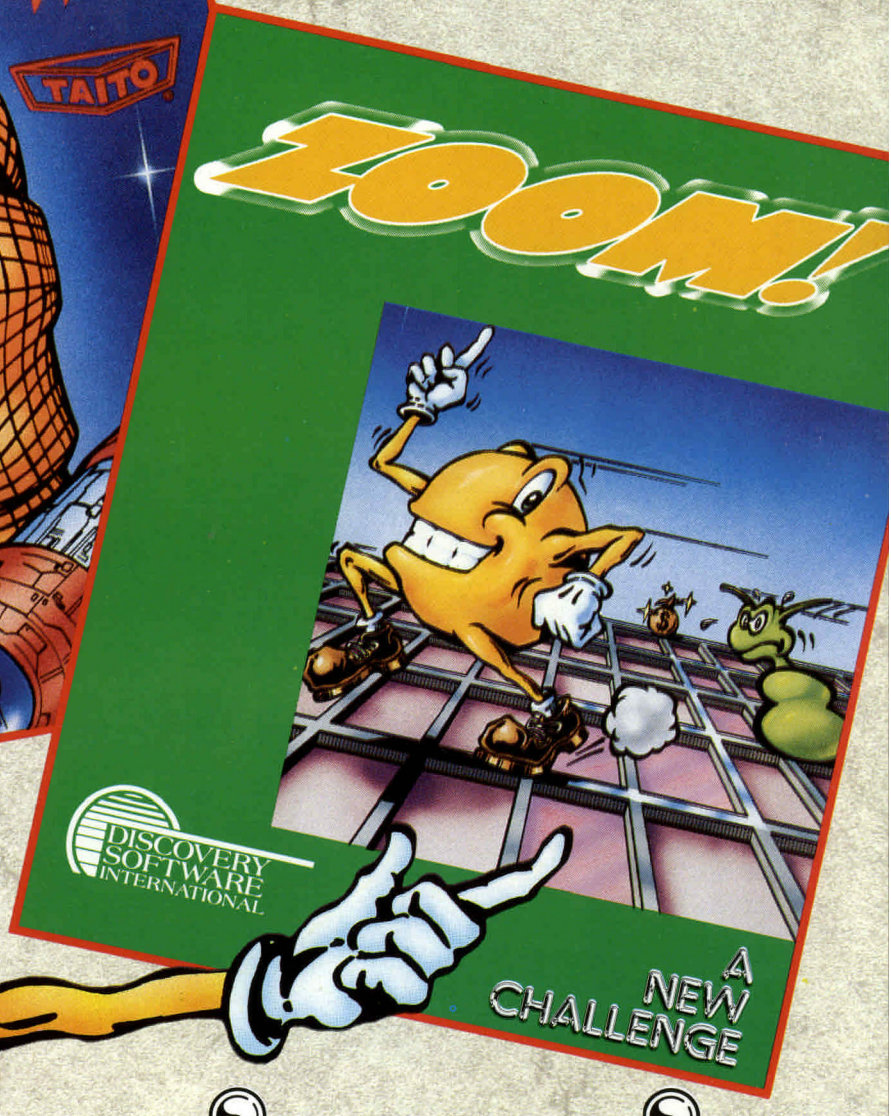
F-BASIC 26 min. 20 Secs
AC BASIC 33 mins
AmigaBASIC 163 mins

As you can see the F-BASIC program ran 25% faster than the AC BASIC version, and the compile time was much faster. Obviously Run and compile times can vary enormously depending on the type of application but F-BASIC does seem to have a substantial edge.

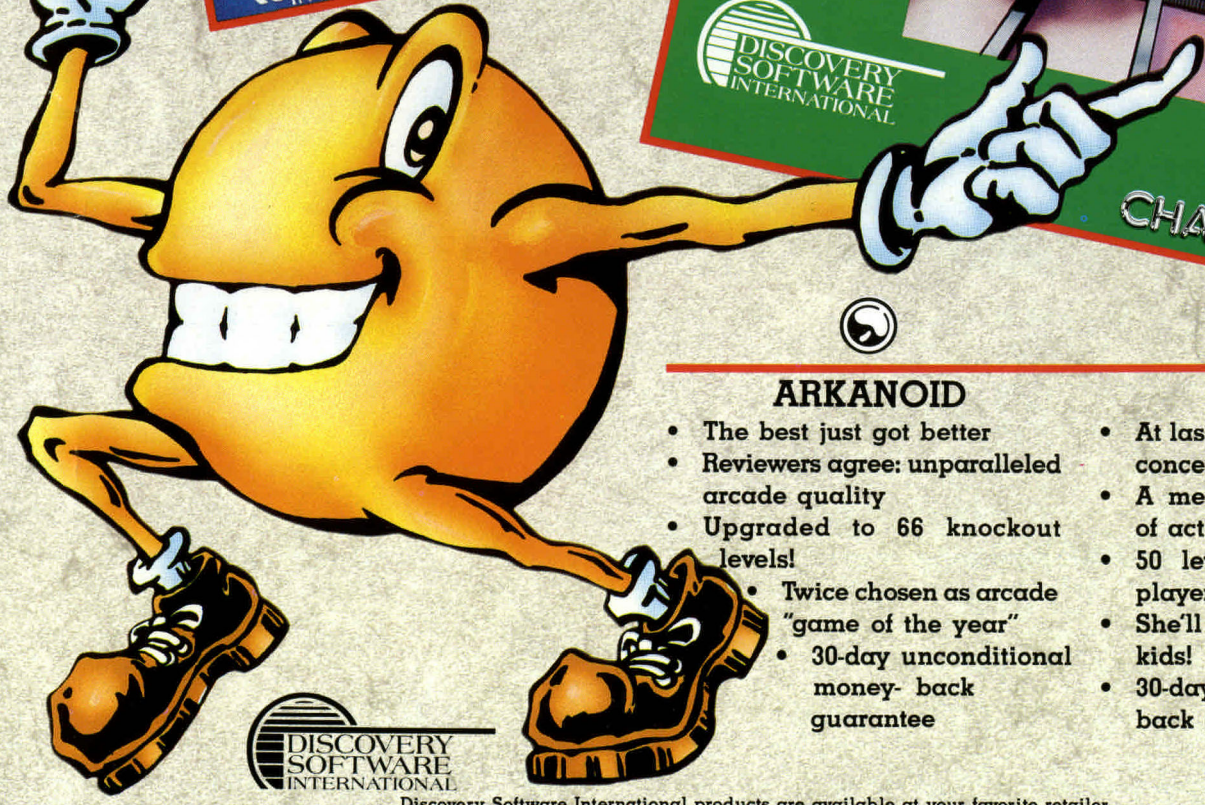
At £70.00 this is one of the lowest priced compilers that I have seen for the Amiga. It does, however, have some rough corners in need of smoothing off and a lot of work is required. Perhaps subsequent revisions will go some way towards remedying these. My overall impression of the product is favourable as a piece of software, though I doubt if I would recommend rushing out to buy it, mainly due to imposed license conditions. ***A.E.***

Price: £70.00
Contact: Amiga Centre Scotland, 4 Hart Street Lane, Edinburgh EH1 3RN. (031) 557 4242.

ONE GREAT GAME DESERVES ANOTHER



33 NEW LEVELS



DISCOVERY SOFTWARE INTERNATIONAL

ARKANOID

- The best just got better
- Reviewers agree: unparalleled arcade quality
- Upgraded to 66 knockout levels!
- Twice chosen as arcade "game of the year"
- 30-day unconditional money- back guarantee

ZOOM!

- At last, a dynamic new game concept
- A mesmerizing combination of action and strategy
- 50 levels. 1-2 players or 2 players at once
- She'll love it too, so will the kids!
- 30-day unconditional money-back guarantee

Discovery Software International products are available at your favorite retailer.
Call 1-800-34-AMIGA for details. Arkanoid. $29.95. ZOOM! $29.95. Prices may vary.
Discovery Software International, Inc., 163 Conduit Street, Annapolis, MD 21401. 301-268-9877.

Arkanoid and ZOOM! are compatible with any Amiga™ model. Amiga™ is the registered trademark of Commodore-Amiga, Inc.
Taito® and Arkanoid® are registered trademarks of Taito America Corporation. •1987 Taito America Corporation.
All rights reserved. •1987 Discovery Software International, Inc.

Amiga Hard Disks

Compatible with Amiga 500,1000 and 2000
[All boxed with power supply and relavent SCSI interface]

60 Mb 40ms Hard Drive.....£695 inc VAT
40 Mb 40ms Hard Drive.....£595 inc VAT
20 Mb 65ms Hard Drive.....£495 inc VAT

THE VDAMIGA REAL TIME DIGITIZER

PAL AND NTSC
VD3 - £550 +VAT

The VdAmiga allows the user to take an input from any video source and convert it to an Amiga format.

THE VD3+ COLOUR DIGITIZER

VD3+ - £795 +VAT

The VD3+ allows the user to digitize in full 4096 colour from any video source including tape.

CRP GRAPHICS TABLET

New Fast Amiga Driver

A4 - £360 +VAT A3 - £595 +VAT

Resolution	: 0.mm or 10 point/mm or 250 points per inch
Accuracy	: +/- 0.5mm (0.020")
Surface	: Non-Destructive, Harmless to magnetic media
Compatibility	: Compatible with all Amiga software including DPaint II, Sculpt 3D, Photon Paint .

GENLOCK

£ 285 inc VAT

We Specialise in Graphics, Animation and DTP Solutions.
Or
Try our Bureau Service

HEWLETT PACKARD

NEW	Desk Jet 300 D.P.I. Printer	£ 795 +VAT
AMAZING	Paint Jet 4096 Colour Printer	£ 995 +VAT
QUALITY	Series II Laser Printer	£1750 +VAT

All With One Year Free OnSite Maintenance

POLAROID PALETTE

INC
Amiga Interface
Polaroid 35mmCamera
3.25" x 4.25" Camera
Power Processor
Slide Mounter
£1450 + VAT

WE CARRY A WIDE RANGE OF PRINTERS AND SOFTWARE

BUROCARE COMPUTER SYSTEMS

211 Kenton Road, Harrow, Middlesex, HA3 OHD
Telephone: (01) - 907 3636 Fax: (01) - 907 0027