

AMIGA

September 1991 £2.95

UI 2.0! New, Improved, First and
Will the Best Amiga magazine . . .

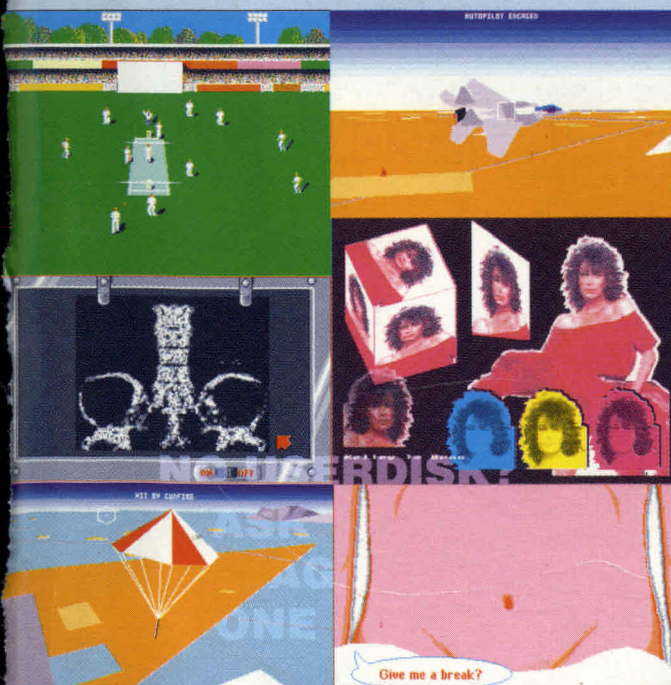
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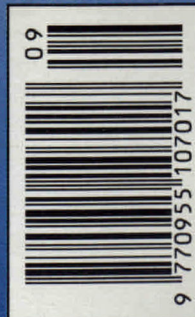
Spectracolor... Simpatica... Bars
and Pipes Professional...
Sonix... TurboText...
DataFlyer... Pandaal Scanner...
Adapt 680X0... Proclips...
Home Titler and much more!
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and Understanding the Amiga**



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SOURCES...

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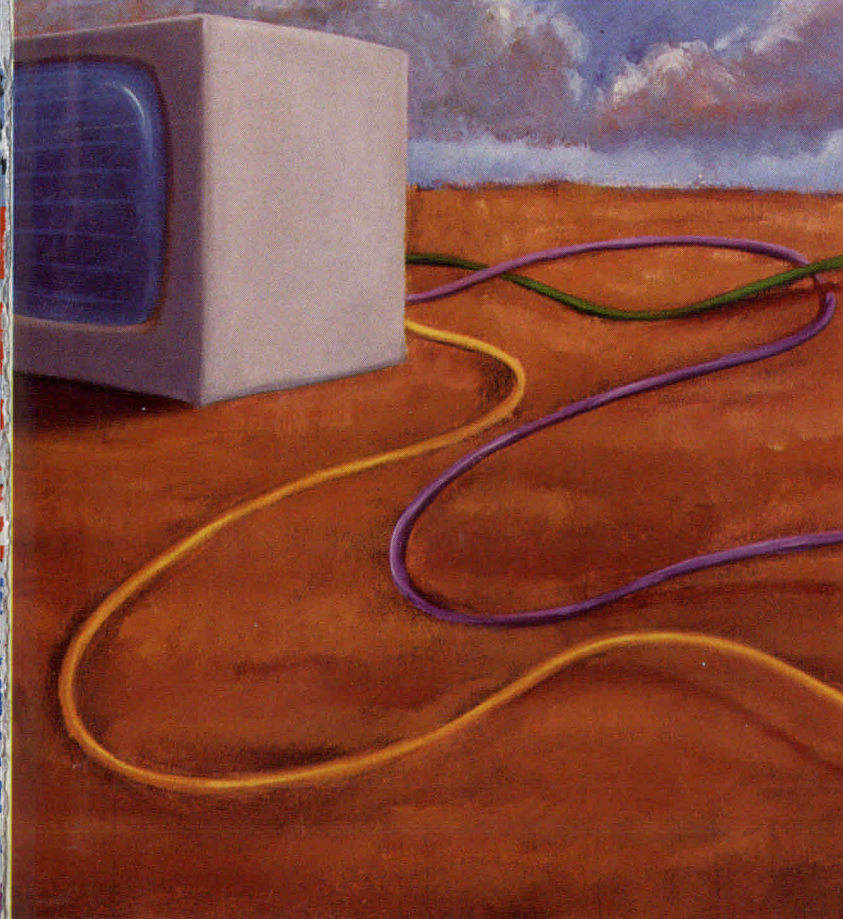
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AS THE CENTER OF THE UNIVERSE.



INPUT...

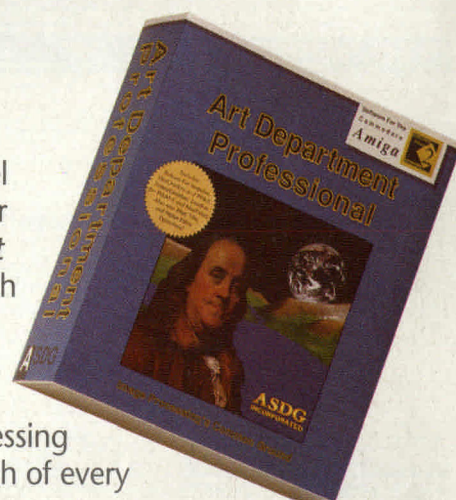
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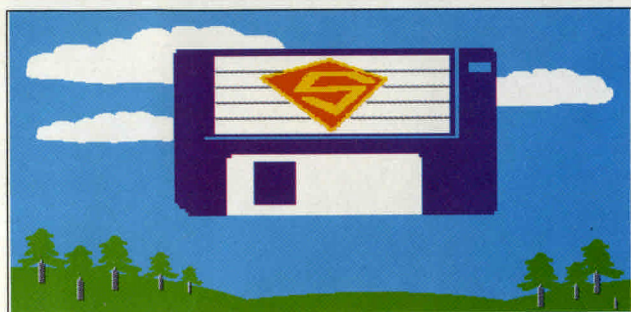
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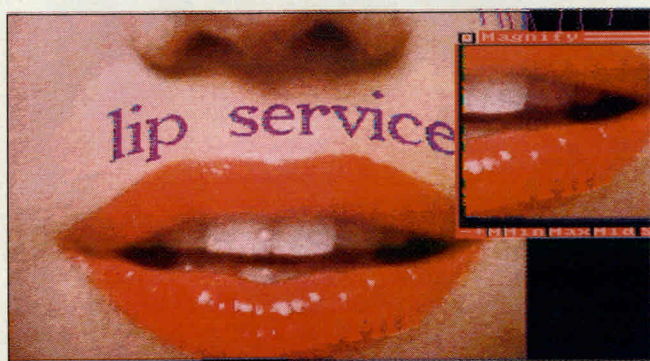
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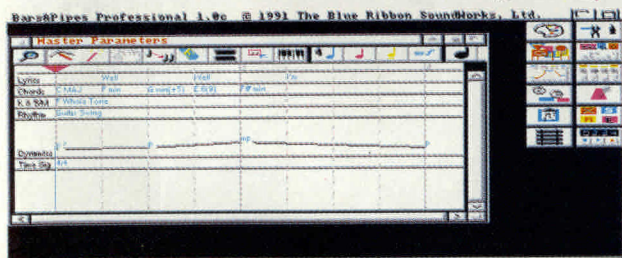
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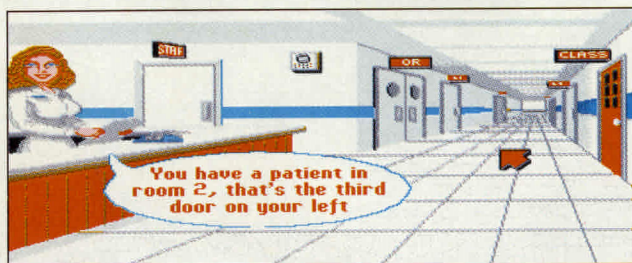
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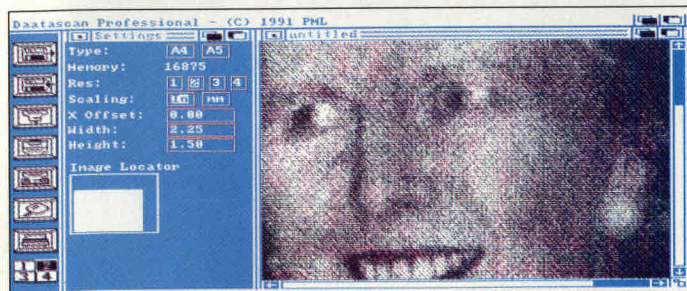
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- All you have to do is sit back and wander through the **AUI** Hyper World!

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AMIGA DIMENSION

Dear *AUI* Reader,

The big challenger to Intel in the MSDOS chip market, AMD, have called their recently released 25 Mgz 386SX "The Microprocessor for the Masses". They estimate that more than 12 million 386 computers sold this year will include it and plan to lower the price of their 386SX chips by 20% each year for the next five years. (Could that mean that by 1997 they will be giving them away free?)

Speed, memory and power in computing continue to grow enormously and costs to fall dizzily. 386 machines have come down to one third in price to under £1000 in two years. Intel's 486 chip prices have slid to about \$250, with the retail price for the machines using them plummeting to under £500 from around £5000 on their launch two years ago.

What has all this to do with the Amiga? Well, technology trends are universal. When we first reported on the Amiga, early in 1985, it was to have 128K of memory. The A1000 arrived that same year with 256K. Then came the A500 with 512K. Wow!

When we redesigned *AUI* recently we decided, unlike other magazines, to go for full megabyte cover disks, considering that as an *AUI* reader, you are probably interested enough to have upgraded to that level, at least. Now, instead of lowering the price, Commodore is selling A500s with 1 Meg on board and games like "The Simpsons", that CBM is buying for its new Amiga 500 sales pack, are being specially created in 1 Meg versions.

Why does technology move downwards in price and upwards in power with such speed? Partly because though original ideas may take a substantial time to create, their later development can be very rapid indeed, but mainly because we demand that speed of change. Our horizons expand to take in the technology that we know is available and we want it now. Woe betide any technology company that doesn't supply us with the latest and the fastest. Even the almighty IBM is now finding that out, and, for the first time, making staff redundant and probably losing money this year because it failed to give the public what it wanted.

Commodore surely isn't putting all its hopes in the CDTV. The Amiga is still its bread and butter. What are the bets that for 1993 there will be a new 68020 Amiga chipset with, say, 2 Megs on board, Workbench 4.0 and maybe an integral CD drive, all selling for £399? If we demand it, we may just get it. And with the speed at which technology moves even that specification could be too modest.

Yours sincerely,

Antony Jacobson,
Managing Editor

USED FOR THIS MONTH'S *AUI*

Arnor's Protext 5.0, ASDG's Art Department Professional and Cygnus Ed, Canon's RC-260 Still Video Camera, CCS's Dos-2-Dos, Checkmate's 1500, Electronic Art's Deluxe Paint III, Fujitsu's RX7100P Laser Printer, Gold Disk's Hyperbook, GVP's Series II FaaastROM Hard Disk Controller Card fitted with 8Mb SIMM expansion memory and a 105Mb Quantum 11ms Hard Drive, HAM-E, Hisoft's Devpac, Microsystem's Scribble!, Amiganut's (PD) MED V3.0, Newtek's DigiView Gold 4.0, Supra's 500XP Hard Disk Drive Controller Car, Nordic's Power Cartridge, Oxix's SpectraColor, Precision's Superbase Professional 4, Nik William's PictureWare.

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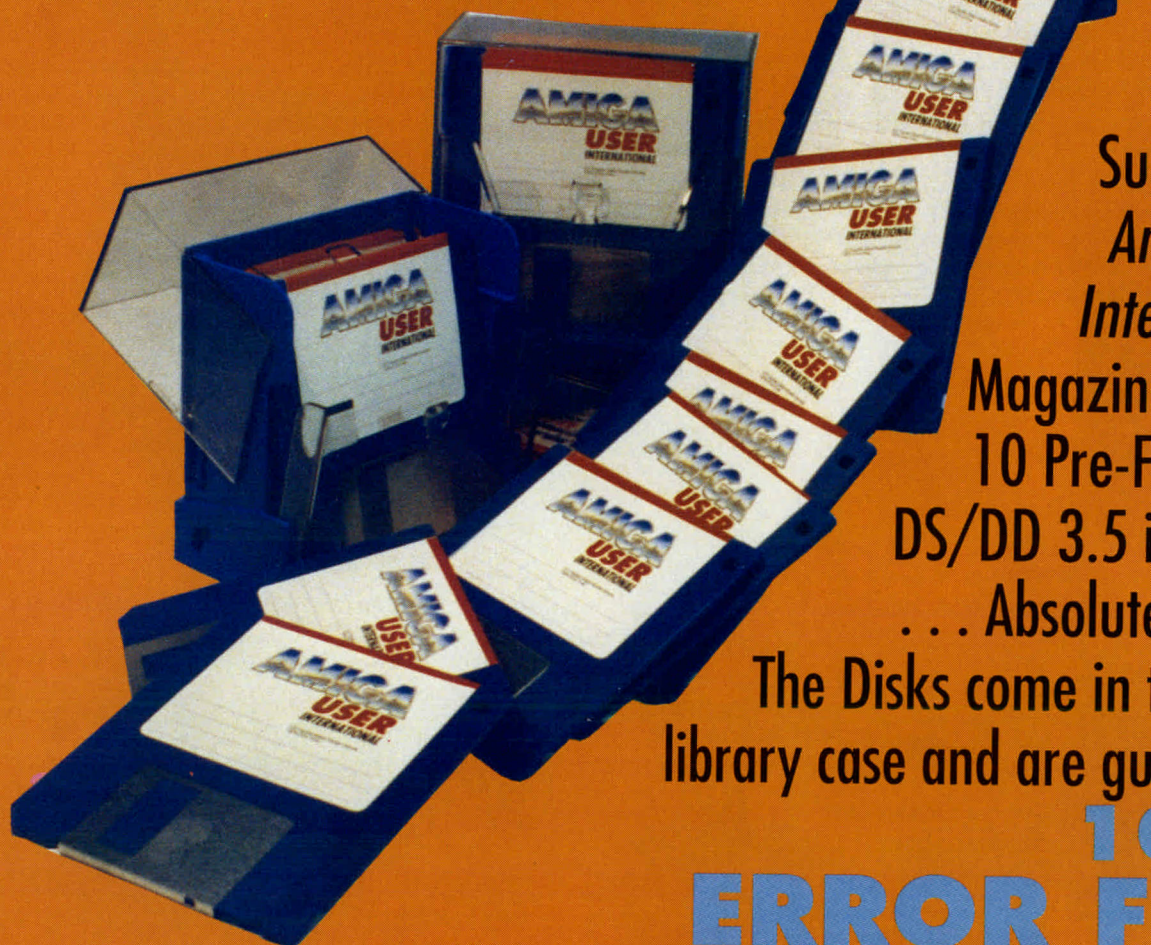
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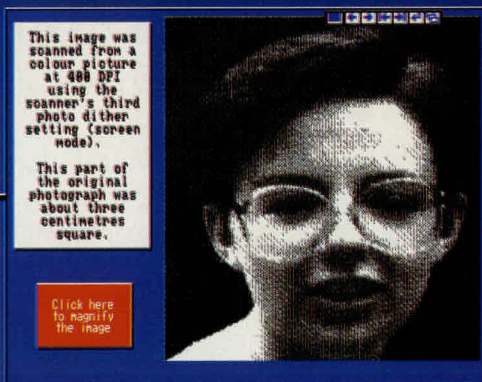
*Buy CanDo later and we'll give you your tenner back.

AUI USERDI

Hand-Scanner

The Hand-scanner hyperdemo is the next best thing to owning one! Try scanning line-art and photographs with different settings. Gripping stuff!

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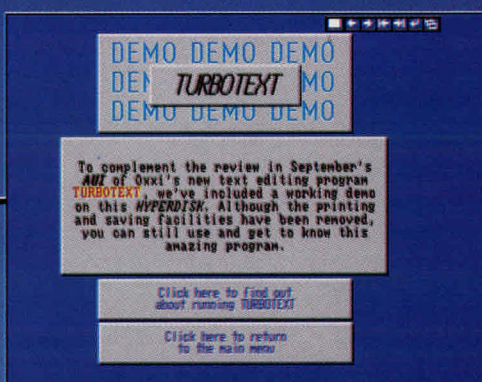


Interact with your magazine! The World of Hypermedia is here, and simply by inserting the auto-booting *AUI* Hyperdisk into your Amiga you can be part of it. Explore the many pages of information, sounds and graphics with your mouse. Adventure through the wondrous technicolour *AUI* Hyperworld.

TurboText

Read the review, then use the program. You can find out what TurboText is really like with this amazing and usable demo.

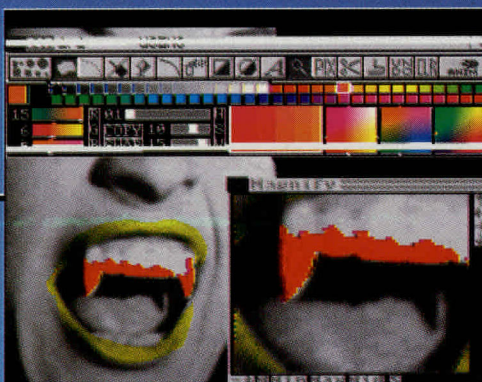
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Spectracolor

See what this astonishing new art package can actually do, the Hyperdisk will show you.

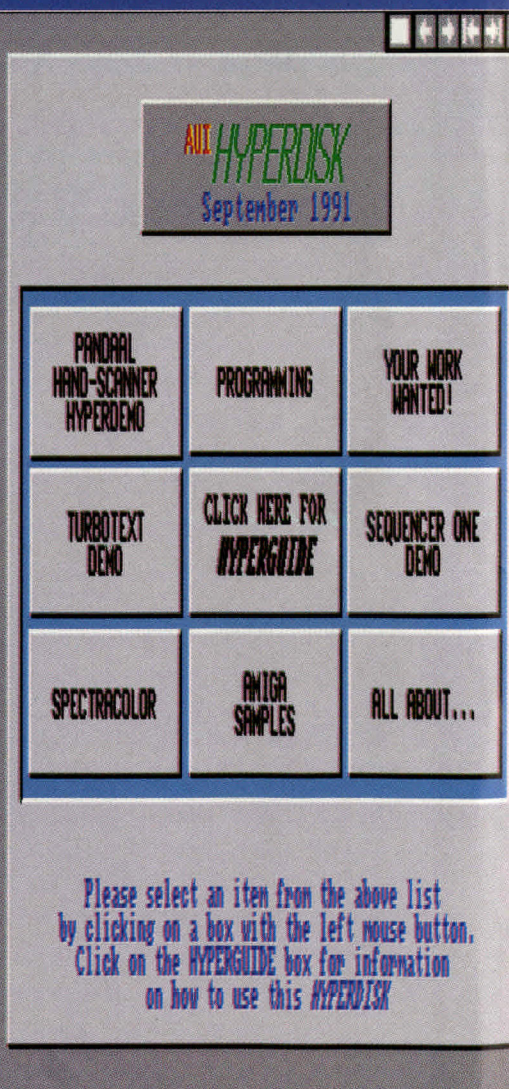
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Amiga Samples

We've crammed fourteen high-quality samples onto the disk. They're just waiting for you to make them into a tune!

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SK No. 4

```

;Out:
; a0 = screen address
; a1 = screen address to right (unless at edge, when its junked
; a2 = trashed
; a3 = trashed

move.l a0,-(sp)           ;Preserve a0 by stacking it

move.l #digits+092,a1     ;The start of the number data
lsl.w #5,a0               ;Multiply by 16 to get correct
add.l a0,a1              ;Now a1 points to correct data

move.l #15,a0            ;There are sixteen (16) lines of data
move.w (a1),a0           ;Poke it into screen ram
add.l #40,a0             ;Assumes a bitplane width of 40 bytes
dbf a0,n11               ;Do next line

move.l (sp),a0           ;Get a0 back, and increase to left
addq #2,a0
rts

digits

```

Programming

Forget the slog of re-typing listings – they're all on the Hyperdisk. It's Rolls-Royce programming for you!

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HYPERGUIDE

The first thing to understand is the control panel, which is at the top of the screen, here:

The control panel consists of six buttons, which you can click on with the left hand mouse button.

← This button is the Previous Page button and will take you back a page.

→ This button is the Next Page button and will take you to the next page in the book.

⬅ From any page you can click on this button to bring you to the opening title screen.

CLICK HERE FOR MORE INFORMATION

Hyperguide

Don't panic and be embarrassed to ask for a little advice. Click on the Hyperguide button for a tour of the facilities.

AUI USERDISK No. 4

Sequencer One @ Gajits 1991

| | | |
|----|------|----------|
| 01 | ▶ 13 | Piano |
| 02 | ▶ 19 | Handclap |
| 03 | ▶ 03 | |
| 04 | ▶ 04 | |
| 05 | ▶ 05 | |
| 06 | ▶ 06 | |
| 07 | ▶ 07 | |
| 08 | ▶ 08 | |
| 09 | ▶ 09 | |
| 10 | ▶ 10 | |

0001:01 Song End

SONG POS: 000059.37 TIME: 0000:03 TEMPO: J=120 START POS: 0001:01 END POS: 0001:11

REC REM PT PLAY STOP AUTO

Sequence One Demo

Deja vu? We've fixed the AUI gremlins and glitches to bring you this wonderful demo of an exceptional sequencer.

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All about... **AUI HYPERDISK** September 1991

| | |
|---|---------------------------------|
| HyperEngineered by... | HyperSound by... |
| John Kennedy | Tony Morgan |
| HyperArt by... | HyperIcon by... |
| Aegis SpectraColor, Pandaal Hand-scanner | Pat Kelly Disk Icon Services |

Main menu More...

All About...

Everything you never wanted to know about the people who made it all possible. Modesty rules, OK?

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Faulty Disk?

In the event that your Userdisk fails to load, please return it to the address below for a free of charge replacement, and allow 28 days for delivery:

AUI FAULTY DISK RETURNS, TIB PLC., 36-50 Adelaide Street, Bradford, BD5 0EA.

Please include your name and address in BLOCK capitals.

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Make readers of other covermounted disks go green with envy when you win the yearly "Trip for TWO to Hong Kong" prize. If that weren't enough there are also two monthly prizes of a free subscription for you or anyone of your choice.

This 'Green with Envy' draw can be entered by simply returning your used Userdisks, once you have finished with them, to TIB PLC. They will supply AUI with names and addresses of readers who return their disks. Each month the draw is made for the FREE subscription offer. If you already have a subscription you can extend it further or supply it as a present to a colleague.

In September of each year the major draw will be made at our London offices and a lucky 'green' reader will win the fabulous holiday for two in Hong Kong with hotel, flights and spending money! You are allowed as many individual entries as you wish! For each disk you return a separate entry into the draw is made. Of course disks must be of an acceptable standard – as if they are not they'll be rejected and you'll lose out on your entry as well as your disk. Returned disks will be recycled so helping to save material and protect the environment.

Send your used disks to: **GREEN DISK RETURNS, TIB PLC., 36-50 Adelaide Street, Bradford, BD5 0EA.**

Important Overseas Readers' Notice

Due to difficulties in importing genuinely usable software into many countries, you may not have been fortunate enough to receive the all-new AUI cover-mounted Userdisk. If you subscribe to the magazine using the special page inside, the cost of the subscription will include packing to enable you to receive the disk with each issue of the magazine. If you do not wish to subscribe, each disk will be available at a price of £4.00 from the following address:

Lazahold Ltd., P.O. Box 10, Pallion Industrial Estate, Roper Street, Sunderland, England. SR4 6SN.

Please make all cheques/International Money Orders payable to MCPC Ltd for £4.00 per disk. This price will include packing and Airmail service to all overseas destinations.

FIELD REPORT

You can duplicate one or two disks but the thousands and thousands for the cover of *AUI*? We ask the people who do it how it happens.

When you use the cover disk mounted on the front of this magazine, you probably give little thought to how it has been manufactured. So this month we thought we would give you a little insight into the work of the commercial disk duplicator and our travels took us to Tib Plc in Bradford, who produce the cover disks for *AUI*.

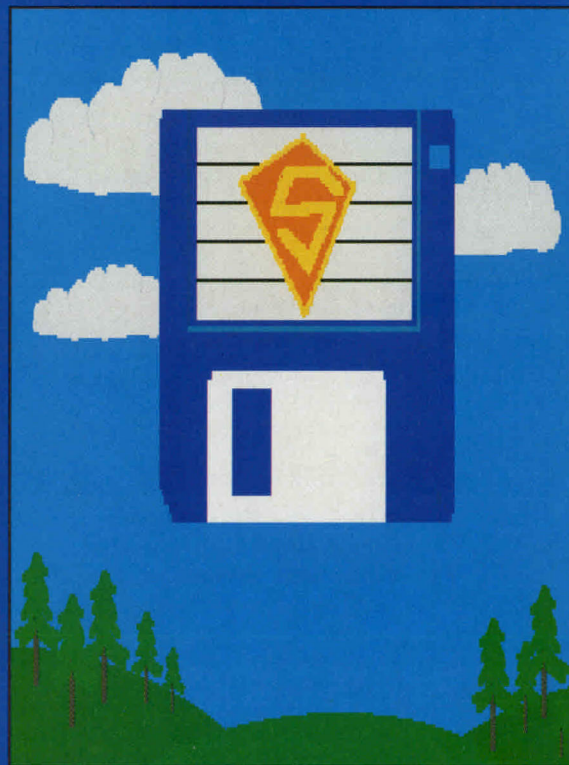
Tib employs 65 people and claims to have one of the most efficient duplication set ups in the country. Tib is not a well-known company, for all its products are sold under other people's names, and indeed, when walking through their packaging department, it is a veritable who's who in the computer world, with many business software houses, entertainment software companies, OEM's (Original Equipment Manufacturers) and dealers packaging on display (Tib won't let us mention any names). Many software houses place their trust in Tib. "Undoubtedly it's because of our quality control procedure" we were told by Steve Tranter, who looks after *AUI*'s connection with Tib.

"All procedures used in Tib have been designed to meet the British Standards 5750 requirements. Over the past two years, we have gradually worked towards accreditation to bring our quality controls into line with the needs of a demanding software market. I think we will be the first duplicator to gain accreditation, but I might be wrong."

Geoff Long has responsibility for quality within Tib, covering the process from receipt of master through to finished product. "Quality is a holistic process and is everyone's responsibility" he told us. "It starts with the media we use (currently Sony for the majority of Tib's work) and its performance is constantly checked on our Trace 3000 duplication machine, which is described as the most advanced duplication machine in the world."

"When we receive a master, it is first of all checked for known viruses, before being written to an erasable optical disk drive. The original is then locked in a fire-proof safe, whilst we prepare production samples for the optically stored image. Once these samples are approved by the customer, we commence the production run and assign a number of automatic loaders or "hoppers" to run the job. On a typical issue of *AUI*, we would duplicate between 30,000 - 40,000 units per

A DISK IS A DISK IS A DISK ... OR IS IT?



day. However, duplicating the product is the easy part."

"As the disks are duplicated, the Trace machine automatically compares what has been written to the image held on the optical disks to ensure 100% quality control. The duplication systems are frequently checked by our in-house engineer for disk drive alignment to ensure we write to the correct address. However despite this, we then check a predetermined amount of product from each hopper in accordance with British Standards tables, to ensure everything is okay."

Once the product has passed quality control, it is then hopper-fed into an automatic labelling machine, which labels at a rate of 1500 disks per hour. This machine will shortly be linked to an automatic "bagging" machine to place the disks straight into their bags. "A welcome addition" we are told, "as it currently takes eight girls many days to bag *AUI*'s disks."

Tib also carries out tape and cartridge duplication. "Cartridges are probably the most exciting project we are involved with at present. Over last Christmas we supplied a significant amount of the titles available on the C64GS and have continued to do so since then. However, I don't feel that the majority of software houses are ready to make the financial commitment that cartridges require, leaving a few companies such as Ocean and Domark to pioneer the market."

"We hosted a seminar with Commodore and Vivid Image to try and spread the cartridge message and the benefits of Tib's products, so we believe our commitment to cartridges will enable us to maintain our edge."

We asked Steve Tranter to comment on a report that Commodore was preparing to launch an Amiga with a cartridge port. But he would neither confirm or deny that Tib were involved in the Amiga cartridge project. Confidentiality, as he stresses, is vital to his customer relationships. Of course, he is right. We don't want anyone knowing what is on the *AUI* cover disk until it reaches you. (There are certain magazines who copy everything we do. Their games reviewers are probably going to copy Tony Horgan's lies next!)

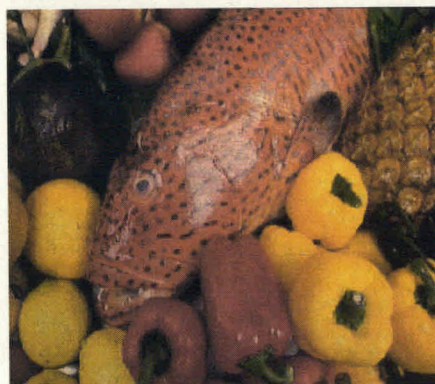
"Like everyone else we are looking at other technologies such as CD but we believe that this will not be a "this year market" for Tib. However if our forecast is wrong, we would simply accelerate our plans."

And finally a word on "cover disks" like the one on this magazine. Do they pose any particular difficulties? "All software duplication is relatively straightforward." *AUI* was told by Geoff Long, "the only problems occur when masters are late or equipment breaks down and hopefully we will build in sufficient time into the schedules to allow for this. However, even the best laid plans go astray..." Ah yes, we all know about that, Jayne Penfold don't we?

New Products From Checkmate Digital



H



A



M

-

E

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- * 256 colour stencils
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- * Auto enhance std IFF palettes
- * Writes IFF24,GIF HAM-E

Image Compatibility:

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- * DKB and QRT trace; RGB8 and RGBN; Targa ; GIF ;
- * Dynamic Hi-Res ; SHAM, ARZO, ARZ1, AHAM, 18 bit ScanLab ; UPB8 brushes;
- * All of the 12 different HAM-E format image file types.
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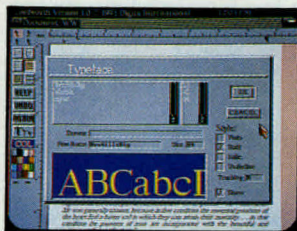
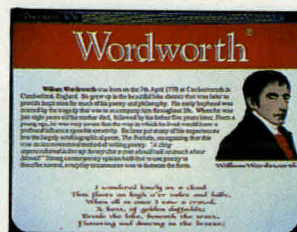
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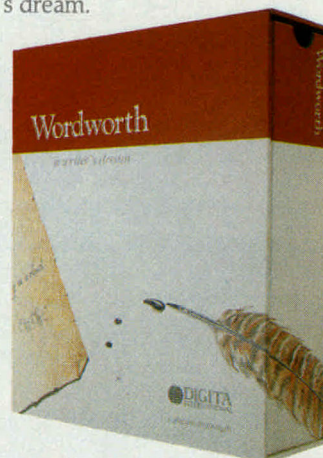
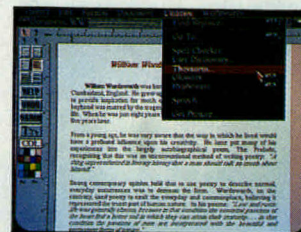
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Peter Lee tests this exciting HAM paint package, from the same development team who created the now legendary Photon Paint.

TEST DRIVE

SpectraColor!

The impending Autumn release of DeluxePaint 4 looks like bringing about a revolution in Amiga graphics; the giant of Amiga art packages is adding Hold and Modify mode to its battery of features.

About time too - but what's the competition got to say about this incursion into HAM territory? In a word, SpectraColor.

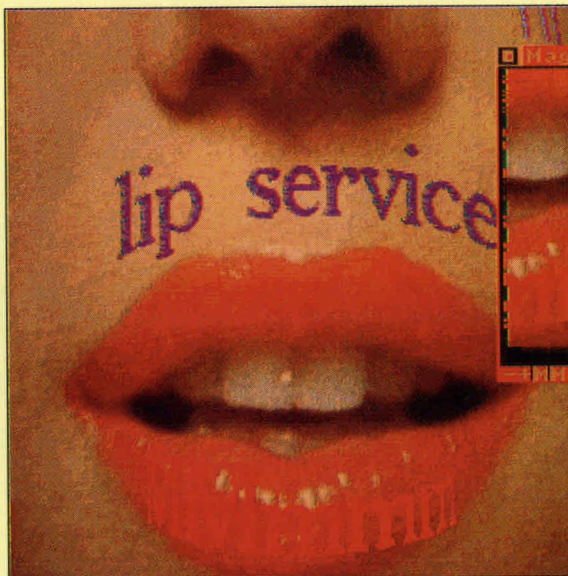
This multi-coloured miracle of a program comes from Bazbosoft, the oddly-named people behind PhotonPaint, one of only two useful HAM art packages (the other, to maintain a sense of balance, is DigiPaint). It bears more than a passing resemblance to PhotonPaintII, but has been turbo-charged with some stunning features.

SpectraColor can display the HAM mode's 4096 colours on screen at once. This is no big deal these days - what is, is its ability to record and play HAM animations, using brush anims along pre-defined paths too. Add this to the kind of special brush and colouring effects which have to be seen to be believed and you have a clear winner.



The woman in red - or blue, yellow, purple - you name it in SpectraColor. Also illustrating the brush wrap, tilt and blend options.

But before an in-depth look at the features, a brief word on HAM; this mode is both a scourge and blessing. It allows access to all the Amiga's colours, but at the price of sometimes weird display attributes - ramping or fringing around the boundaries of colours. It can take three pixels to change from one adjacent colour to the next. This is a facet of the mode and you have to learn the dodges to avoid it wherever possible. HAM uses 6 bit planes, and depending on the complexity of your image and whether or not interlace is selected, picture files needing well over 70K of disk space are generated.



Unmistakably Marilyn Monroe. Using the brush bending tools, text is contoured to the shape of her face.

SpectraColor comes on a single unprotected disk which can quickly be installed onto a hard drive. A minimum 1 meg of RAM is needed, with the usual benefits of longer animation available to those with more memory, and clearly those with hard drives will be able to store extensive anim files. There is an examples disk too, and a faultless manual.

"SpectraColor takes the HAM mode into exciting new territory"

The program follows the traditional and well-proven method of on-screen drawing icons; but in this case the menu serves a triple purpose; initially you can select drawing tools - the usual array of freehand, filled, and clip options - together with choice of any of 64 colours. Pressing the Return key expands the menu to give access to the massive colour palette, where any of over 4,000 colours can be selected. Finally, the menu can be toggled to an animation panel, where VCR style controls are used to define, edit and play animations.

Among the more attractive options which can affect drawing tools are shadowing - where you can specify the offset of a shadow which is drawn automatically as you paint - and pixelisation, which creates an off-beat effect by averaging colours under the cursor into squares of colour - anything from 2 to 10 pixels wide.

But perhaps the drawing features with the widest appeal and greatest use are the brush effects. Many of these are only possible because of the massive range of colours in the palette. But others can be attributed to the skill of the programmer, and in this latter category are the wraps - the ability to contour a flat brush onto one of a number of surfaces.

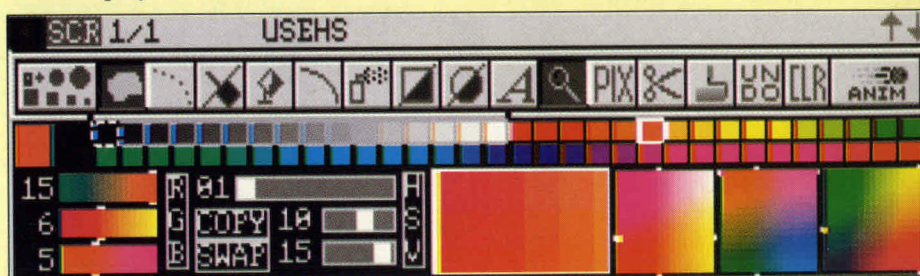
"It is all done intuitively; in the first case you place the brush on the start frame, then on the end frame, and the program works out the in-betweens"

These include 3D wraps like cone and tube, and a freehand option to enable brushes to be contoured on any symmetrical shape you care to draw, such as candlestick or heart.

Brushes can be manipulated in standard ways too - flipped, rotated and resized or twisted - together with more powerful effects such as 3D tilts and stretches.

Added to this is the ability to control how the brush is painted on screen - by configuring the blend parameters (by means of an un-intuitive control curve) you can have the brush merge into scenes as if it were transparent, with control over dithering. This way it is simple to combine images from many sources and transform an ordinary picture into an other-worldly type of image.

Brush luminosity can also be set to allow for excellent creation of apparently solid objects when used with the surface



TEST DRIVE

Spectracolour!

C O N T I N U E D

◀ mapping tools, and you can select a backlight option for some fine fantasy effects. By specifying the angle, intensity and contrast controls you can mimic some of the nicer effects of ray-tracing programs.

Obviously the detail will not be as fine, but the time saved is by a factor of ten. To use an example - to map a brush onto a ray-traced object is a time-consuming affair by any standards. But SpectraColor does it in a couple of minutes. And in the examples I was using - digitised brushes of marble and stone - the quality was more than adequate.

plane. Control is on the fiddly side, but gives excellent results.

ANIMATION

The real selling point of the program - considering how closely it mirrors software already available - is the animation. Full page HAM animation has been done before - in its time, very welcome.

But the big gap which SpectraColor fills is the use of animation brushes - the ability to manipulate animation brushes over a sequence of frames and backgrounds.

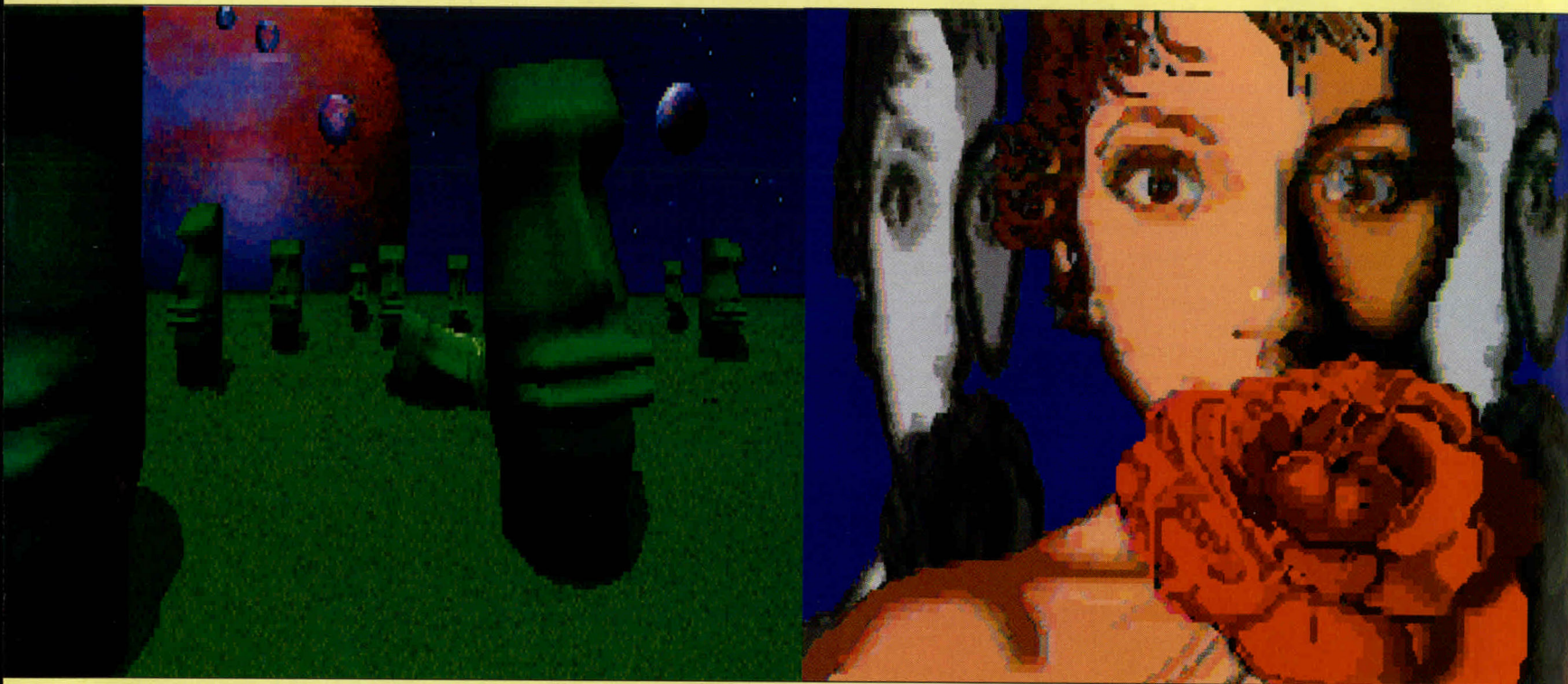
It does this in a way familiar to

then on the end frame, and the program works out the in-betweens. A more advanced method - but still extremely easy - is to draw a freehand path which the brush faithfully sticks to.

The similarity with DPaintIII falls down, though, because unfortunately you cannot specify any rotations, twists or depth options for the brush.

The exception is that the programmers included one transition which will operate over the range of frames - blending. By using this it is possible to begin the animation with the brush being painted at 100%, and ending as totally transparent - a controlled fade.

As the brush is rendered on each frame, the current paint and brush specifications are applied - so if you want the brush to be ghosted (ie 50% solid), on each frame, it will be if the blend option is active. And if you want a solid coloured brush to move across the background as if it were a transparent piece of glass (the background image showing through in a bluish tinge, say), you would simply have to set the brush mode to Hue and it would



Using the freehand wrap option I had a seemingly-solid marbled vase in under five minutes, from loading the HAM image of a slab of marble, to stamping down the finished brush.

The program goes a long way in assisting with the manipulation of brushes in 3D; using a set of pre-defined solids brushes can be 'folded' around them. The cube, for instance, can have an image drawn on each of its facets, or act as the mould for the single object (as if a drawing had been wrapped around it). Each facet shows a piece of the image - like a folded cardboard box.

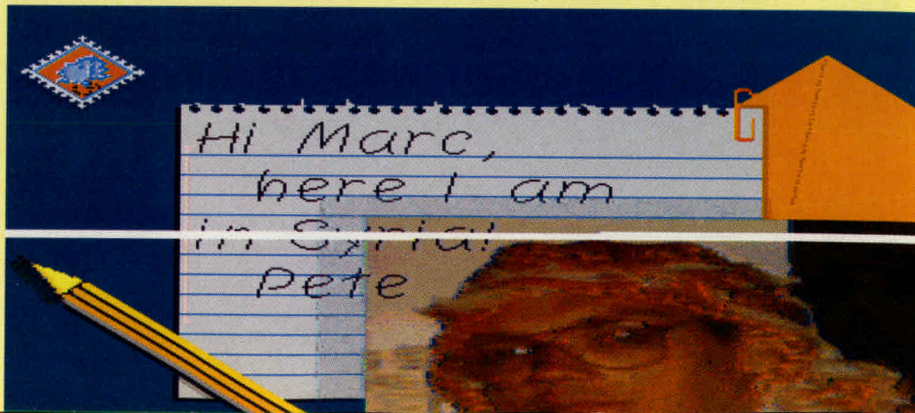
SpectraColor does have another 3D trick - the ability to tilt images in all directions - including the z, or depth

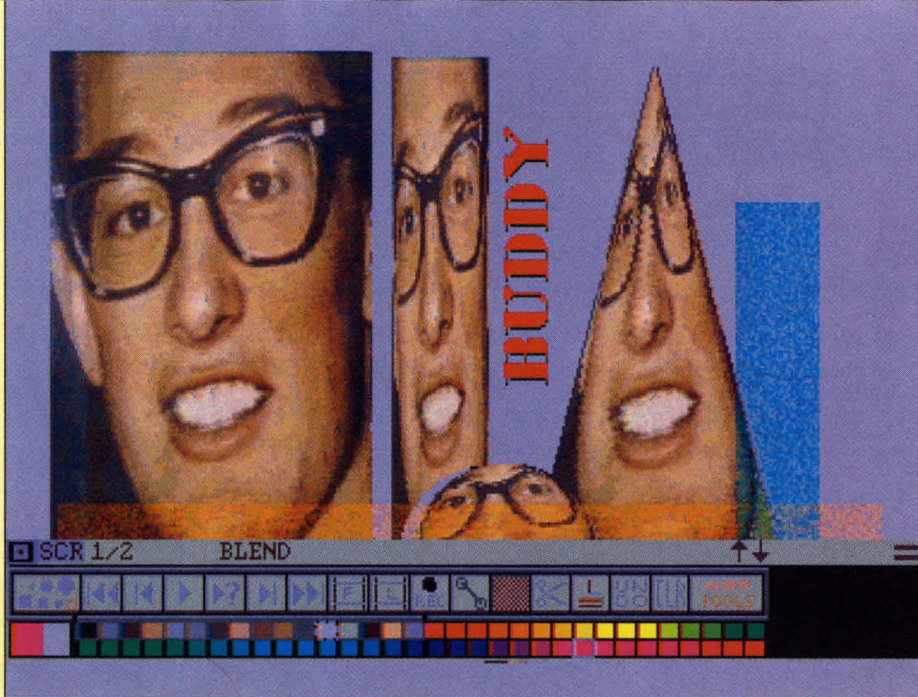
"Where SpectraColor scores is that the path of movement is specified in two ways - neither of which involve inputting figures"

DeluxePaintIII users, by moving the brush along a specified route. Where SpectraColor scores is that the path of movement is specified in two ways - neither of which involve inputting figures. It is all done intuitively; in the first case you place the brush on the start frame,

be done automatically once recording begins. The rendering effects on animations are not exactly lightning fast, but not unreasonably lengthy either. Frames are saved in the standard Anim format, so can be played back in other compatible programs.

Standard artwork is created, and a digitised picture loaded. The palettes are remapped, and you have the basis for a letter on disk.





Buddy Holly wrapped on various shapes, with the animation palette showing.

"Editing animations is simplified by the page structure"

The current brush setting is also applied as animations are rendered - so if you want the anim brush or standard brush rendered on a cube, sphere or whatever, it will be done automatically. This leads to some intriguing effects - moving images on the facets of a cube, for instance.

However, I have to say that although DPaintIII anim brushes loaded in perfectly well, when it came to freeing the brush my computer crashed on more than one occasion. This was the only flaw I encountered during extensive use, though.

Editing animations is simplified by the paging structure - addition and deletion of frames, copying from ranges are all catered for. You can re-load them into the program for re-editing, or append sections - anyone familiar with DPaintIII will find no trouble understanding SpectraColor's animation facilities.

"Pressing the Return key expands the menu to give access to the massive colour palette, where any of over 4,000 colours can be selected"

Finally, SpectraColor leaves nothing out in terms of ease of use. Here's a quick run-down of other features; the undo facility is a major asset; any Amiga font can be loaded and rendered to the current settings (ie blended); the scissors tool can copy rectangular, lassoed or polygon shaped areas; there is full control of base colours (to avoid HAM fringing pitfalls); both foreground and background brush modes are user definable; you may use brushes as fill patterns; it is possible to rub-through images from the next page; severe overscan is supported; there is high quality magnification control, and you can create protective stencil areas.

PROS

- The first HAM art program which allows brush animation.
- Anim brushes can be cut and used to great effect - standard mode anim brushes (such as from Real Things) can be loaded easily and converted to the HAM mode.
- Ideal for manipulating digitised images.
- Outstanding rendering effects easily achieved.
- Quick keys used for almost everything.
- Manual of outstanding quality combining tutorials with excellent reference sections.

CONS

- No fault of the program - but HAM mode can cause some unforeseen effects with adjacent colours.
- No major brush manipulation during animation (i.e. no perspective, rotation or twists).

CONCLUSION

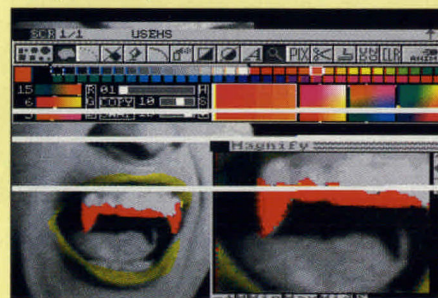
SpectraColor takes the HAM mode into exciting new territory. As someone who uses a lot of digitised and genlocked graphics in my work I have found it unsurpassed. Animation is a major advance over other HAM programs, but I have to admit that I shall continue to use DeluxePaintIII to create anims because of the sheer control over brush manipulation. But by then bringing ther SpectraColor, the real ma the Amiga's colour potenti be realised.



A brush of Monroe's face was wrapped around an oval to suggest the fragility of an egg. The hand was loaded from another digitised picture. Both had separate palettes but by re-mapping they can co-exist.



Weedy subject - but showing one half of a black and white digitised still after colouring with the hue option.



Using the magnify tool you can zoom into the heart of your work. Using any of 4096 colours available from the HAM palette menu, you can give life - or in this case death, to your images.

"This way it is simple to combine images from many sources and transform an ordinary picture into an other-worldly type of image"

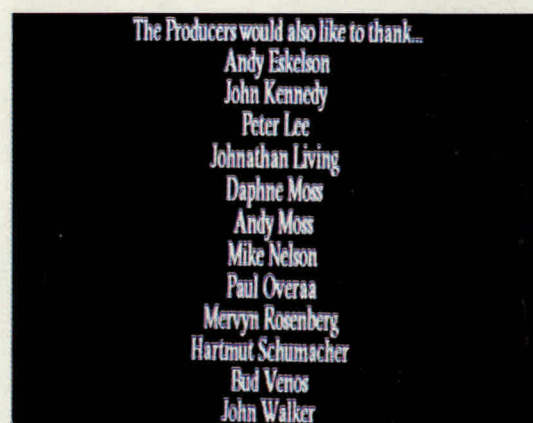
TEST DRIVE

TEST DRIVE

Video titling was never
so much FUN!!!
(honest!)



Drop shadows of various degrees can be added to your text, and by placing the shadow directly beneath the text, you can give it a glowing outline.



Home Titler

Some video packages aim to give you broadcast-quality TV graphics. However, if all you want to do is give your own video productions a subtle touch of class, without filling the screen with weather maps, spinning logos and fancy wipes, laying out large sums on high-end video software just isn't on. Genisoft's Home Titler could be what you're looking for, catering for the small-time video producer.

Previously known as Video Generic Master, Home Titler is one of the simplest titling packages on the market. The program is split into two modules. The first is the text editor, in which your text is written and formatted. The second is the scroller, which displays your text in the chosen style.

The nine fonts included on the disk are Callisto, Diamond, Ganymede, Helvetica, Himalia, Io, Sapphire, Times and Topaz. Times, Callisto and Himalia come in two sizes each, around 18pt and 45 pt. Topaz comes in both 6pt and 11pt. Drop shadows of various degrees can be added to your text, and by placing the shadow directly beneath the text, you can give it a glowing outline.

With your text sorted out, you can enter the scroller screen. From here you can choose either vertical or horizontal scrolling, or have your text displayed instantly, one screen at a time. The scroll speed is variable via a slider control. Click on the appropriate button, and the screen clears, awaiting a second click before scrolling your text across a background of your chosen colour. Holding

down the left mouse button pauses the scrolling.

That's about it. Its uses are limited to start/end credits or narratives, but because of its simplicity, it's very easy to operate. The scrolling is completely smooth, as it should be, and if you pick your fonts carefully, you can come up with some unambitious but professional looking sequences. It's very basic, but works well. If that's what you're after, look no further.

Price: £49.95

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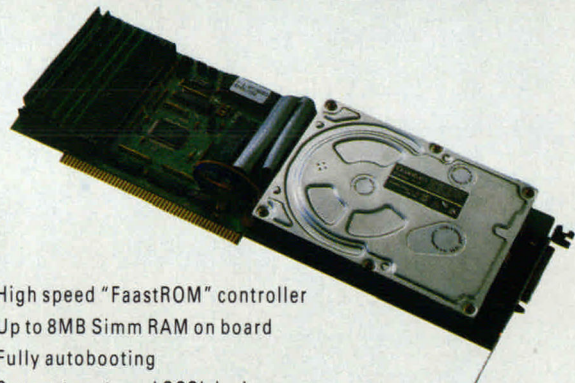
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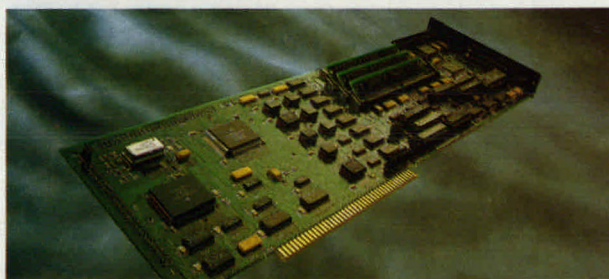
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Henri Bujko clutches this magic box that will turn your stills into action. Action!

Simpat

The Amiga is an amazing graphics workhorse. Never before has anyone interested in video been able to exploit such a wide variety of packages to achieve new and inventive 'eye catching' graphics. We can create a series of still images with which we are pleased. What do we do with them? If they are standard Amiga images we can compile them into an anim. An anim is a compressed sequence of still images that when loaded into the Amiga's memory will play back at speed. The compression technique works by storing the difference between the images. All parts of the image that do not change are ignored. This technique works fine while there is limited movement. The playback speed and memory usage is determined by the differences between the images. When the differences are great the anim eats into the memory and

the animation slows down. This is particularly noticeable when moving a camera in a 3D rendering package. All of the objects in view of the camera will move relative to the viewpoint. What is the solution? A turbo board will certainly speed up the display rate but will not compensate for the differences between the frames. The animation will speed up and slow down according to how much movement is encountered in different parts of the animation. It will not improve the memory utilisation of the machine. You are still restricted by the available memory of the machine as to the size of the animation you can display at one go. The only currently affordable solution is to lay down the animation to a video deck a frame at a time. This can be done manually (OK for perverts) or

"An anim is a compressed sequence of still images that when loaded into the Amiga's memory will play back at speed"

using a single frame animation controller that lets the computer do the donkey work (computers are ideal for performing boring, repetitive tasks!).

Simpat is such a single frame animation system. It comprises hardware (the single frame controller) and software to automate fully the 'laying down' of animation sequences to video tape. When you boot the software you are presented with a screen that includes four small windows. Double click on one of these windows and a file requester pops up. Select anim or sequence of IFF's you wish to load and the system will load the windows with miniature versions of your images. Once all of the images are loaded you can scroll back and forth along the sequence. It reminds you of working with a strip of film on one of those preview devices. You can select a mini-preview where a small window will pop up and play back the sequence at a real time speed. A full screen preview is available but this plays back at a slower speed and is only really useful as a check that the full size images are correct.

Once you are satisfied with the animation through previewing you are then ready to render the animation to tape. Using the tape transport controls on the screen you can position yourself at the point on the tape you wish to start recording, click on the render icon and go



away for that long earned rest. Come back in a few minutes, hours time and your animation will have rendered to video tape.

Sounds simple and that is exactly what this package is. Obviously the system has been designed not for programmers but for graphics people and requires minimal effort in getting up and running. This is not to say that it is not packed with useful features.

24 Bit

At the time of writing this article I have just received a new version of Simpatica that supports the ACS Harlequin and G2 Systems Masterboard 24 bit frame buffers. 24 bit files, in all their glorious 16.7 million colours, are loaded in the same manner as Amiga IFF files. The small images take longer to generate but a new optional quick load feature has been added. The quick load does not attempt to generate the small images but represents the frames as small white rectangles. This speeds loading considerably. In all other respects the system

ica!

behaves the same. When you select render, the 24 bit images are loaded into the buffer and the deck starts recording. Loading the buffer takes time but Artbeat tell me that this is because of the size of the files and because the images are dynamically resized to the optimum resolution of the boards. It will be interesting to see how this side of the system progresses as new buffers appear.

Summary

Artbeat have developed an excellent package. Aimed at the professional user it overcomes many of the limitations of the Amiga. In the case of 24 Bit graphics it currently employs the only method capable of rendering the images automatically rather than manually. Frame buffers are planned with massive amounts of memory but these are likely to prove prohibitively expensive and only allow short bursts of animation. The system is a joy to use and after experimenting with it for a while it will change the way you produce animations. No longer tied to constraints such as memory requirements and playback speeds you will find your work becomes more adventurous. If you are serious about producing graphics for a living you must buy this system.

"Select anim or sequence of IFF's you wish to load and the system will load the windows with miniature versions of your images."

"24 bit files, in all their glorious 16.7 million colours, are loaded in the same manner as Amiga IFF files"

SIMPATICA FEATURES



1. Automatic Tape Blacking. The tape must be blacked (stripped) before recording a sequence. This is similar to formatting a disk and sets up the frame information on the tape using control track or time code.



2. Frame centring. No relying on preferences here. Move the displayed image around the screen with the mouse and press ESC when you are satisfied.



3. Frame dwell. Defaults to 1 - this means one of your images will render to one frame of video giving you 25 or 30 frames per second (depending on whether your deck is PAL or NTSC). A frame dwell of 2 will record the animation at half speed. You can set independent frame dwells for individual frames.

4. Auto Shutdown. If you are leaving the system to render overnight you do not want to leave the tape in the deck once the sequence has finished (tapes get hot!). After the time out you specify, the deck will eject the tape and shutdown (after the sequence has finished of course!).

5. Video Tools. There are a number of video tools including colour bars, grey scale, alignment grid and countdown clock. The countdown clock is particularly interesting. The clock background is a high resolution IFF file so you can pull it into a package like DPaint and customise it, maybe including your company logo. It also automatically includes text that describes the current project.

Minimum System Requirements
3Mb Amiga with 1Mg chip ram

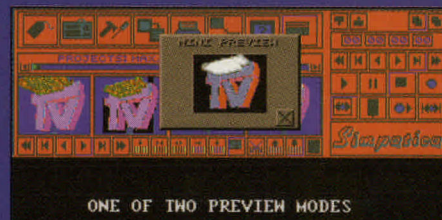
Preferred System

5Mb Amiga with Hard Disk
68030 card for 24 Bit Graphics
Harlequin or Masterboard Frame Buffer
Frame Accurate Decks Supported
All Sony compatible - 9 pin - full function edit decks eg BVU, Betacam.

6. Time Out. If the system cannot find a file (keep those people away from your hard disk!) the system will alert you for the time specified. After that it will record the missing frame description on the relevant video frame/s. I think the time out has been designed for users who will be operating the system with floppy drives!



7. Re-render. If at the end of the render session you notice a particular image is incorrect (should have checked your preview!) you can go back and re-insert individual frames (after correcting the offending frames of course). This is invaluable when trying to meet those perpetual deadlines.



8. Stop Frame Animation. With the camera attached to your deck you can use Simpatica to act as a standard animation controller for traditional forms of animation.

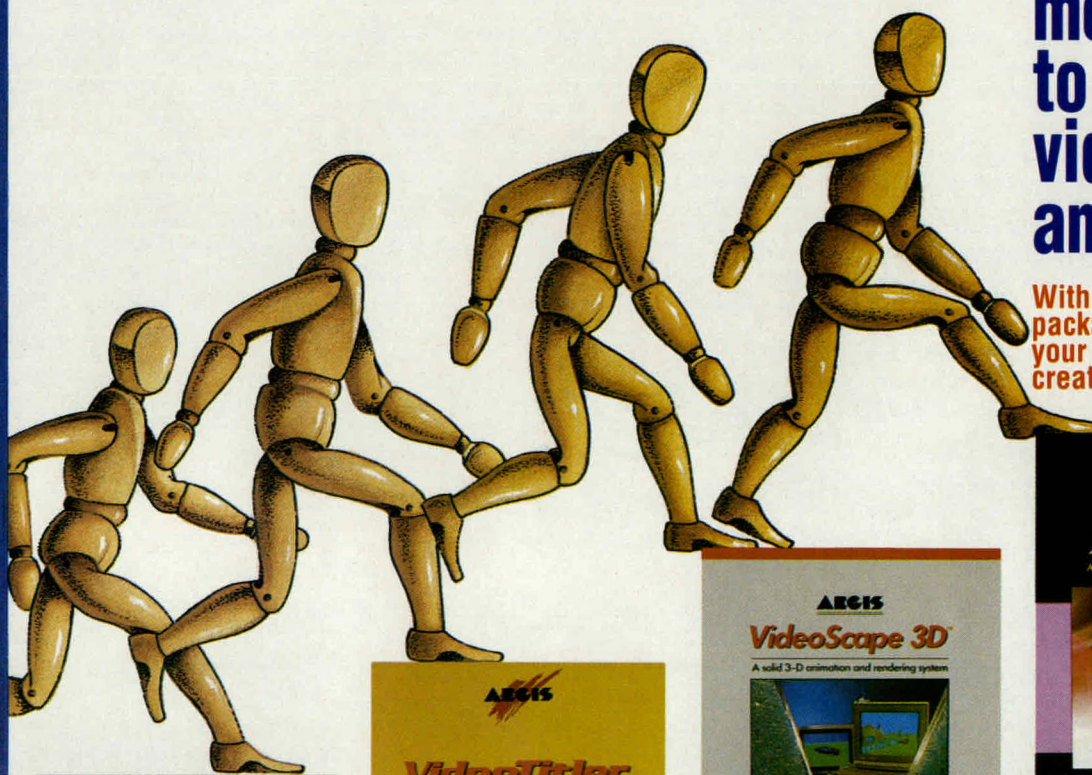


Editing a sequence is as simple as marking out frames on the sequence as ranges and cutting and pasting. This makes syncing up to a soundtrack a doddle (ideal for those scratch pop videos). Just produce a list of the main sound events and build up your animation accordingly. On a large memory Amiga with lots of hard disk storage it is possible to set up an animation sequence lasting several minutes. This would prove very tedious putting together without the system and would require the skills of a good video editor. As for doing it manually frame at a time, forget it, life is too short.

Price: £1750.00

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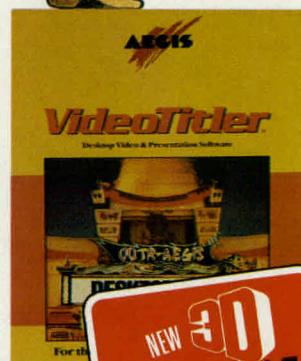


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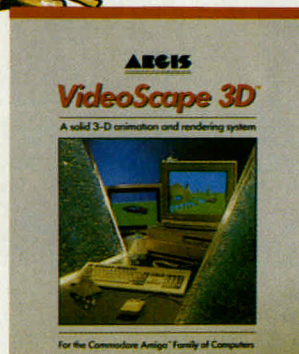


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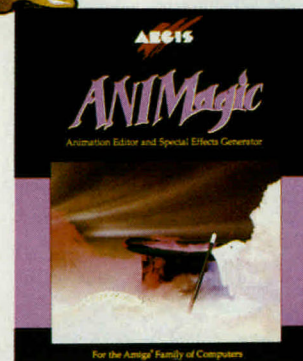


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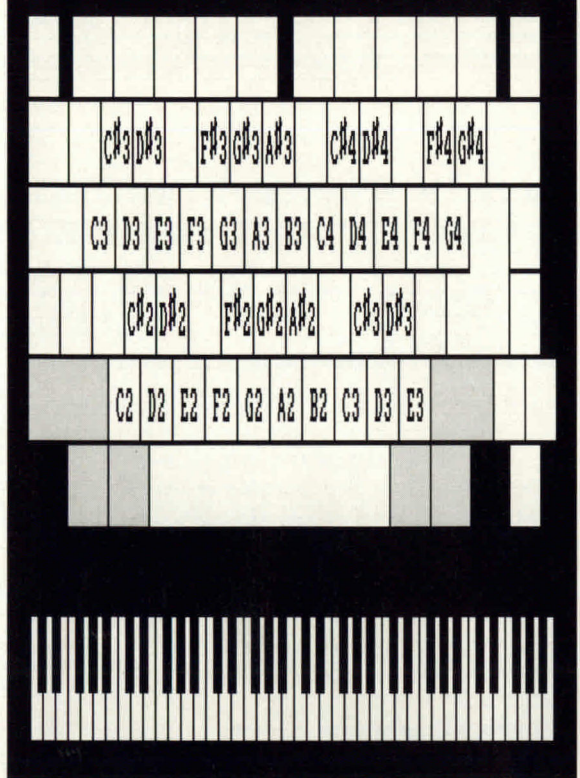
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Aegis SONIX V2.0 - Unnamed



TEST DRIVE

Aegis Sonix

A Golden Oldie upgraded with a couple of new demo disks. Mike Nelson finds it's still worth playing.



It seems strange to be reviewing one of the oldest and most famous Amiga programs, but Sonix seems to have slipped through the vast net of AUI and over the years has quietly become something of an institution in the Amiga universe. It has a rather chequered history, starting out over five years ago as MusiCraft, a companion to Commodore's own paint package, Graphicraft, and marketed by the now defunct Aegis Corporation. Partly because of its early introduction, and also its fantastic demos, which still conjure up fond memories of "Smoke on the Water", or "Lady Jane", Sonix is now firmly established as one of the premier Amiga music programs. This review will examine why this is so, and also look at the newest upgrade (2.0) plus some rather clever demonstration disks from Sonix's supplier, Oxixi.

What does it do? In effect, Sonix is a score editing program, and not a sequencer. This means you have to enter each note individually into the score, using a very simple procedure involving the mouse and an icon for each of the

"Even the least musical of people can generate some passable sounds which vary from a wailing electric guitar solo, to a more sedate brass or keyboard sound."

usual symbols found on sheet music, but more about this later. Although there is no sequencing facility, Sonix will play any samples through the keyboard, even while the score is being played, allowing a kind of Karaoke effect. The last attribute is the synthesizer. Even if you do not have access to a sampler or a vast library of instruments, Sonix lets you design your own weird and wonderful sounds with a comprehensive set of tools that can be applied to internal waveforms.

There are no fancy hardware requirements for Sonix to run; it happily works on any Amiga, but the very nature of sound genesis means it will run out of memory if you start including large samples in your score, but 512K users will get a fair bit out of the program before this happens.

The Score

Entering musical notes into Sonix is extremely easy as all you have to do is pick up the appropriate icons and drop them onto the stave in the right place. Sonix automatically puts in the bars, counting the right number of notes for the given time signature. You don't really need to understand how musical notation works if you have the score already. All you do is copy the symbols in, press "Play" and the Amiga does the rest.

The Amiga is equipped with four voices and Sonix copes with these restrictions very well in that you can change instruments at any point in the track, and this

technique is a most powerful asset as most of the demos show. One commonly used method of generating impressive music is to sample little segments of a record and string all these together using Sonix, and the changes in "instruments" are used to weld the individual sounds into something more complete. For instance, you can sample a base line and some drum sounds which more or less repeat for the duration of the song. Sonix is very good at playing repeating samples and you can then add the melody over the top using the spare sound channels, perhaps designing your own instrument with the synthesizer. This is how many of the "Jive Bunny" type chart hits of today are generated (unfortunately, say some).

There is a comprehensive editing menu which allows you cut and paste sections of music around your score, so repetitive sequences such as the drum beat are easy to generate, and errors can be readily corrected. I bet Beethoven would have given his right arm to play with Sonix!

The rest of the "Score" screen is concerned with how the song is played back, allowing you to change settings such as the overall volume, how fast it all goes, and you can also get Sonix to transpose the tune in real time. This is handy if you find that the bagpipes you are using to accompany the computer aren't capable of getting right down to the bottom of the scale. Using the transpose function means you do not have to alter the score in any way, so a simple click of the mouse re- ▶

◀ stores the key back to its original setting when you get fed up with the bagpipes. In addition to this, the Amiga can be tuned in line with real instruments using a different slider, which can itself be used in combination with the transposer for further control.

Although you are allowed up to four channels, it is sometimes desirable to turn one or more down, or totally off, to assist editing, and Sonix allows the user to do both. If a channel has been quietened to half volume, all its notes on the staff are coloured blue, thereby highlighting the different voices. Additionally, it is also possible to mix the individual volumes to compensate for differences in the loudness of the various samples; this can also be used to highlight the sound channel assigned to the keyboard, so you can hear clearly what you are currently playing along over the Jimi Hendrix wailing guitar solo.

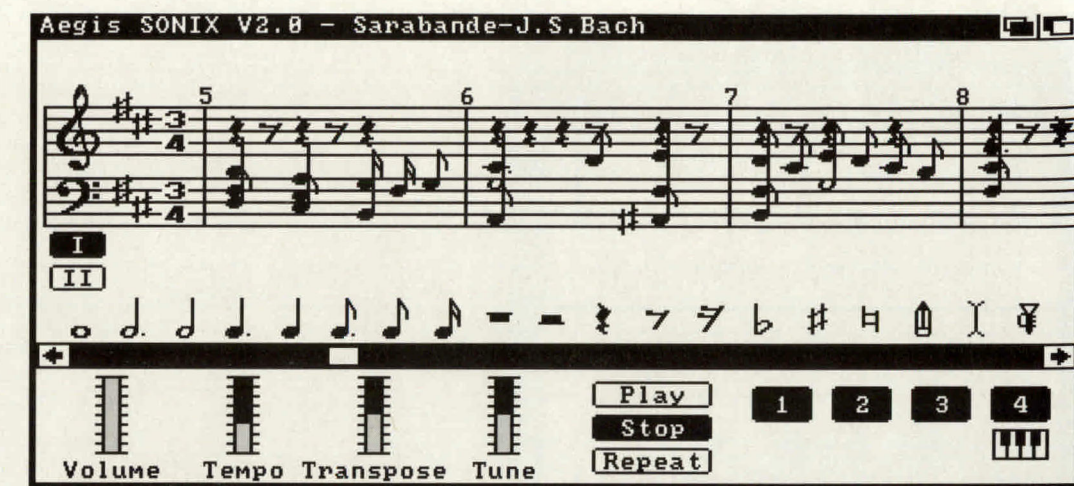
The Keyboard

The next screen is the keyboard, and this is used to assign different notes to the keys on the computer for playing along with your Amiga. Sonix requires that samples are saved in a specific format, and the permitted frequencies (pitches) are hard coded into the file, so it will not permit you to play especially outrageous sounds, but you can do almost anything if you have Audiomaster to alter the samples! This screen is useful for just messing around with different samples, and you can load an instrument into memory to play it, perhaps with Sonix playing a backing track through the other voices.

The Synthesisor

This is one of the more interesting features of Sonix, as it allows anyone to make their own instruments, even if they do not own a sampler. The synthesisor has its roots back in the 1970's when musicians did not have access to digital sounds, and everything was analogue. This meant that weird "Pink Floyd" sounds had to be generated using hardware, and therefore if a band wanted a particular sound, someone had to build the right gizmo to warp the waveform into the desired effect. The Amiga is bang up to date with its sound generation apparatus, the sound being stored as a series of numbers, and computers are very adept at manipulating data. Sonix applies this idea to a set of standard waveforms (sine, sawtooth, square and triangle), as well as allowing you limited scope in editing your own.

Once you have the basic waveform, anything goes and the fun starts. Users of the Commodore '64 will be well acquainted with the idea of Attack, Decay, Sustain and Release (ADSR), otherwise called the envelope of the sound. This is used to shape the way in which the amplitude of the wave varies over a period of time, and so you can make a sound slowly build to a peak, decrease to a sustain level where it remains until



"Once you have the basic waveform, anything goes and the fun starts"

finally dropping back to zero at the Release rate.

The Low Frequency Oscillator is a nifty little device which is effectively a second waveform that can be applied to the components of the instrument and modify greatly the resulting sound. Its effects are difficult to describe, and also rather hard to predict at first, so you can have endless hours of fun and games just messing around with this gadget and hearing the consequences. Other effects such as portamento and Phase changes can also be added in to change the sound markedly.

The SoundTrax

There are many examples of Sonix music files in the various public domain libraries, but Oxix have recently released their own two packages, each consisting of a pair of disks full of songs. Why should you shell out for something you can get in the public domain? Oxix presumably asked the same question and decided to go for rather a novel solution instead. There is nothing especially different about the scores and their accompanying instruments, except they are deliberately set up with the provision for you to accompany the computer, using its keyboard to add a melody onto the backing tracks provided. The instruments and keys have been very cleverly chosen so it is virtually impossible to sound out of tune with the Amiga. Thus, even the least musical of people can generate some passable sounds which vary from a wailing electric guitar solo, to a more sedate brass or keyboard sound.

There are usually four tracks per disk, and there is relatively little variation in the overall sound, which is a rather pleas-

ant blues style. The real drums and guitar instruments make a refreshing change from the usual synthetic sounds you may expect. The samples are very high quality, about as good as you can get, given the Amiga's restrictions and also memory considerations. I found playing along quite rewarding as it really is almost impossible to go wrong. I just hope the neighbours understand I've always wanted to be a rock star!

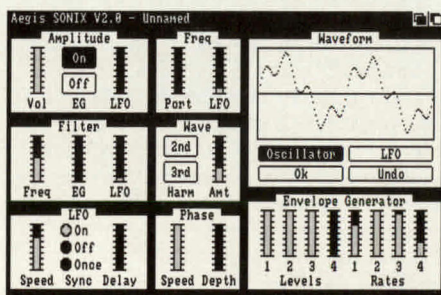
Conclusion

Sonix is undoubtedly an excellent program, but there are a few caveats, most of which are due to its age. With the release of version 2.0, it would have been nice to see Sonix modernised, with a nice new user interface, idea of intuitive usage is at best quaint, and derived decidedly from the days of the 1.0 operating system! However, it is functional and does not seem to crash.

Commodore went to great extremes to build up a standard file format for both sampled sounds, and also musical scores, so that such information could be exchanged between different programs, but unfortunately, Sonix has its own formats and it is by no means easy to get around the problems. It would be nice if Oxix could address this failing, but Sonix has such an enormous following that it is not exactly going to put off new customers.

The manual is excellent and assumes very little, with clear explanations of musical notation theory, sound generation, and MIDI with lots of useful tips to help you get the most out of what is really a very inexpensive system.

Sonix is already an institution among Amiga users, and should continue to develop. It does not set out to be a professional musician's tool, that honour is shared by MusicX and Dr. T's software, but Sonix is very good value for money, and the SoundTrax disks just go to show what you can do with a bit of effort.



"I bet Beethoven would have given his right arm to play with Sonix!"

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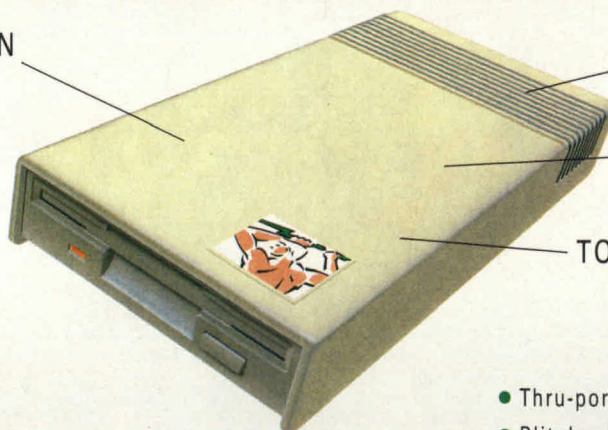
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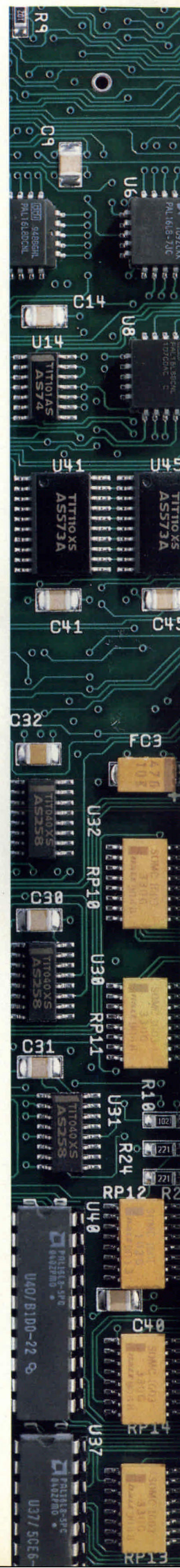
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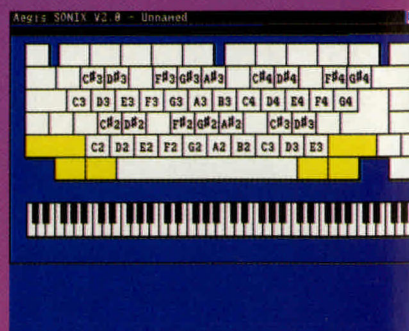
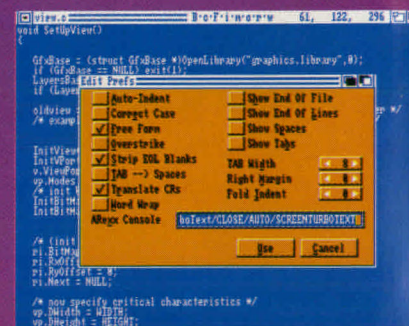
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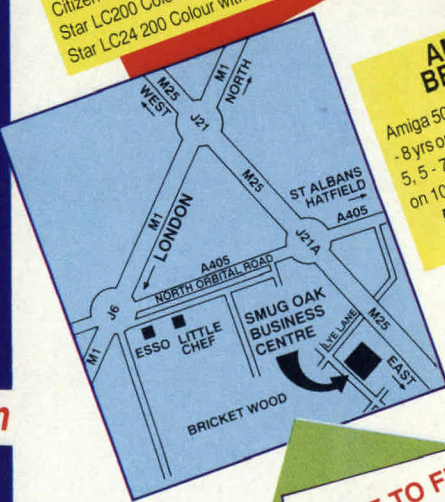
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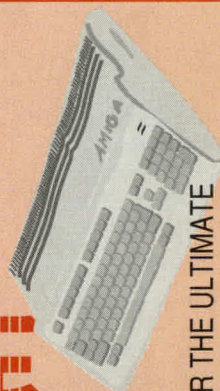
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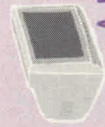
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PAGE

3

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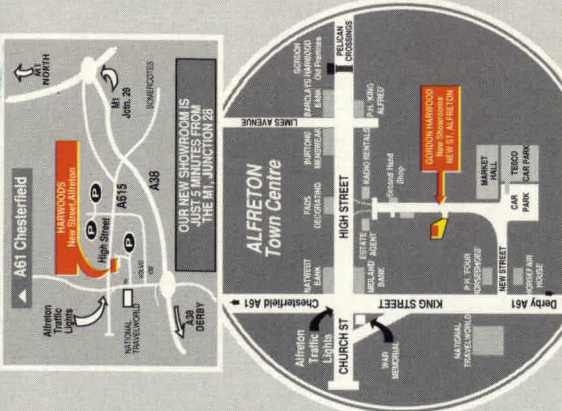
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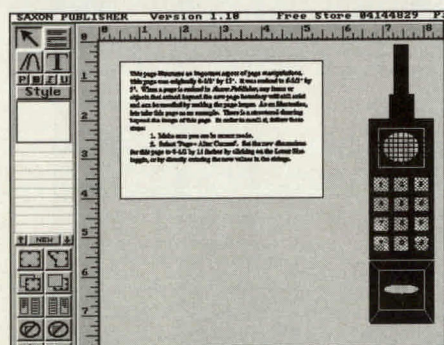
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TEST DRIVE



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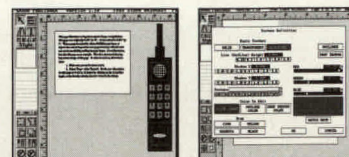
A page preview that lets you see facing pages on screen at the same time - though you can't edit them.

Automatic page numbering, which can be in Roman or Arabic numerals and have any style attribute you care to add.

CMYK Colour Selection so that you can specify colours as differing percentages of yellow, cyan, magenta and black inks. Saxon claims that this will produce a colour hue that is a hundred per cent accurate.

Other changes provide improved screen fonts and an output colour pre-

Saxon Publisher



view which claims to show exactly how a chosen colour will appear in the final printed document. I have my doubts about this feature, since the appearance of on-screen colours depends upon the monitor's settings. It's no substitute for Professional Page's Pantone system that matches the colours to an objective, printed standard.

Saxon Industries has applied for worldwide patents for its new colour separation technology called APEX, which stands for Adaptive Photographic Extraction. It claims to produce better colour separations than any other desktop publishing program, including such Mac and PC packages as Quark Express, Pagemaker and Ventura Publisher. I haven't been able to test this. And promised samples of Saxon Publisher's colour output have yet to arrive.

You can now create page templates and assign them to a function key so that they can be easily recalled at any time.

Saxon Publisher is still being aimed at the professional users. It works only in interlace. And it will print only to PostScript compatible lasers or photo typesetters. But at least it now provides the full range of built-in PostScript fonts, including Zapf Dingbats which was missing from version 1.0.

There still seems to be no way of add-

John Walker revisits a highly-touted program that is beginning to live up to its reputation.

ing extra PostScript fonts, though. The rewritten manual doesn't mention them as far as I can discover - my copy has some pages missing. And you still can't flow text automatically from one column or page to another. You need to click on each one individually.

Saxon Publisher is improving. Its strengths remain - its use of style sheets and tags, its ability to flow text around irregular objects, to rotate and skew text and graphics, and its high quality output of bit-mapped images.

Version 1.1 addresses many of its failings. The next version - 1.2 - promises support for non-PostScript lasers and even dot-matrix printers, as well as compatibility with AGFA Compugraphic outline fonts.

If the remaining deficiencies have been sorted out as well, it could be a powerful addition to Amiga desktop publishing. We live in hopes.

Price: £249.95
Contact: Surface UK Ltd, 5
Rockware Avenue, Greenford,
Middlesex. UB6 0AA.
Tel: 081-566 6677
Fax: 081-566 6678

4 Channel Micromixer

These days most MIDI sequencers allow you to use the Amiga as a sampler, and likewise, the bulk of sample sequencing programs now have some degree of MIDI support. Fine, but what happens when you want to record a piece that's composed of both samples and MIDI music? You get yourself a multi-channel mixer, that's what.

This one from Omega Projects is positioned as an entry level unit, reflected by its low price. It's a compact piece of kit at around 15 x 7 x 4cms. Along the back of the unit are five 3 inch jack sockets: four inputs and one mono output. Four rather over-sensitive volume knobs control the relative levels of the inputs, while a fifth knob determines the output volume. A single glowing LED gives a rough visual

Tony Horgan tests this budget soundmixer.

indication of the output volume level. Also included in the package is a condenser microphone.

When it comes to using the Micromixer for combining Amiga and MIDI sounds, it performs well. Although you set the output volume, the unit monitors the incoming sounds and tweaks their volumes to maintain a constant output level, which ensures that your inputs are well balanced. It does however, have the unfortunate effect of amplifying any quieter sections, and as it does that, very noticeable background noise creeps in. You can avoid this though, by adjusting the output volume when appropriate. Equally satisfactory results are gained from mixing sounds from tapes, record decks, CD players and mics.

As an introduction to home recording,

the Micromixer makes a good buy. The one limiting feature of the mixer is its mono output. Even most budget synths are stereo these days, as of course is the Amiga, so being restricted to mono mixing is rather frustrating. Still, you'd have to look pretty hard to find a cheaper mixer, and if only for that alone, the Micromixer is well worth a try.

Price: £39.95
Contact: Omega Projects
14 Derwent Close
Culcheth, nr Warrington
Cheshire
Tel: 0925 763946



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| Star XB24-10 Professional 24 pin colour | £399 |
| Star XB24-15 Wide professional 24 pin colour | £499 |

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| NEW LC200 colour fabric kit | £29 |

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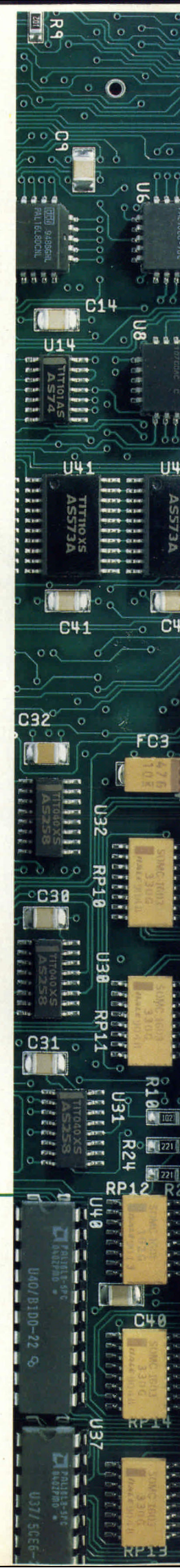
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in . . .**

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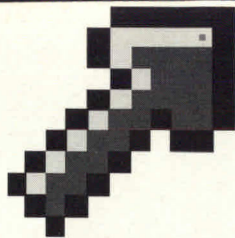
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State of the Art Copying

Newsfile compiled and
edited by Anthony Mael
and Martin Witton.



NEWSFILE

ONLINE'S CHALLENGE GOLF

It's the greatest round yet"! claims Clement Chambers of the new software Company On-Line. On-line's Challenge Golf features four complete 18-hole courses:- Negativeland, Japan/Soto Grande, Spain/Merion & Banff Springs, USA. It has 1-4 player options, stroke or match play, driving range, professional or amateur levels. It has a handicapping system, hall of fame, save/load matches (32 player records), power & curve controls, full club selection (1-9 iron/1-5 wood/pitching and sand wedge).

There is no truth in the rumour that if you don't get a hole in one, Clement Chambers once of CRL, specialists in horror-style games, dressed in schoolboy uniform as Jack the Ripper, appears and strikes you on the head with a mini golf club shaped like a razor. At least we we hope it's not true... Coming soon at £24.99. The game, not Clement...



Ingenious, My Dear Austin

Evesham Micros claim that after careful research they have solved a mystery that has been puzzling many A500 users. The mystery is what to do if, like so many, you have bought a half meg internal upgrade and now you find that you want to upgrade to further memory.

In the past there seemed no other option than to rip out the half meg and deposit it in the nearest bin - or sell it on to a wide-eyed Atari ST owner. Now Evesham claim to have solved the mystery with a simple answer - a Megaboard. This magic device is a cunning innovation that fits neatly between the current upgrade and the A500 and gives a further 1 meg of RAM so providing the computer user with the riches of 2 meg in total. Ingenious, what, these Evesham fellows!

The Megaboard will work with any four chip upgrade not exceeding 90 mm in length. (Bet you it fits in with the half megs Evesham sells!)

Evesham's brilliance does not stop there or even with computing. We can authoritatively deny the rumour that Evesham boss, Richard Austin, used to own the car company of that name or that he recently competed at Silverstone in the Dunlop Rover 216 race in a 2 Megaboard turbocharged Amiga.

We can confirm however that none other than **AUT's** Managing

Editor attended that historic day and saw Austin hurtle round the track to finish a very creditable twelfth, especially as the day before Austin, bored with travelling the right way up, had spectacularly rolled his car. Another driver, Dave Loudun, also in the Evesham stable, did a little better - he won the race.

So if you want a second hand racing car or a brand new Megaboard, don't call us. Phone Evesham and ask for Richard Senna; mention Daytona and the Indy 500 and you'll probably get a free Austin 7 or a chequered flag with your order.

Contact: Tel: 0386 765500



"THE WORLD'S SMALLEST A4 PORTABLE PRINTER"

Citizen Europe have launched what they claim is the world's smallest A4 portable printer - the PN48 Notebook Printer - halving the weight and reducing the size of competing printers by up to 40%. For the first time, say Citizen, portable users can now carry both notebook pc and A4 printer together in a standard briefcase with room to spare for files, documents, newspapers and even lunch. (That depends on your appetite!)

Weighing just 1.17k with the battery and measuring 29.7cm x 9cm x 5cm in dimensions, the PN48 portable printer is forecast to bring true portable computing - computing and printing - into everyday business life. The PN48, including the battery, will retail at £325.

PN48 is a non-impact device, featuring a very high resolution

printhead specially developed in Japan. Using standard office paper, recycled paper or even OHPs, the printer is claimed as being capable of producing true letter quality print, comparable with the output of a laser printer device. Text and graphics can be combined on one page at print speeds of 53 cps in LQ.

The PN48 offers the user a choice of two resident fonts - CTZ Times Roman and CTZ Courier - with a variety of different print sizes and printstyles.

Battery life is between 25-30 A4 pages, after which the battery can be recharged by plugging into the electricity mains. Recharging take approx six hours. Alternatively, the PN48 can be plugged into the mains using the mains adaptor, or used in conjunction with a planned car adaptor for use on the move.



THE TINY CITIZEN PN48

Not Amusing

The Simon Wiesenthal Centre in Los Angeles has shown to incredulous U.S. journalists some computer games they have discovered circulating in Germany and Austria that take as their subject the Holocaust - the extermination of 6 million Jews by the Nazis.

Apparently popular among neo-Nazi groups of students, the computer games bear such titles as Aryan Test and KZ Manager. (Hitler's Nazis tried to establish the "Aryans" as a "Super Race" and "KZ" was the abbreviation for Con-

centration Camp.)

For KZ Manager, the game includes the task of selling enough gold tooth fillings torn from the mouths of prisoners to earn sufficient money to pay for gas for the gas chambers of the Treblinka death camp.

The games are claimed to be produced by groups using such names as Adolf Hitler Software and Hitler and Hess.

We can't think of any comment that is worth making about this disgusting business.

DATA PROTECTION FOR PATIENTS

Patients must be given a better understanding about how the NHS uses their personal data, according to officials working for the Data Protection Registrar. Hospitals should inform patients how their data will be used. In addition, data should not be given to commercial companies, support groups for particular illnesses or associations of hospital friends without patients' consent.

However, patients have no right to withhold their personal data from processes which are an integral part of the NHS such as contractual arrangements between provider units and purchasers.

The Data Protection Registrar's

report has been laid before Parliament.

Computer Generated Postcards One concern is the use of appointment postcards which may contain information about the patient's GP, the date of birth and other personal information which could be read by postal staff and other members of shared households. It is not just a question of privacy, but a real risk to vulnerable people through giving information to someone who may want to pass themselves off as a social worker or health visitor.

All NHS units holding personal data have to be registered under the Data Protection Act.

NEW CONCEPT KEYBOARD

In response to the increasing popularity of Commodore computers in the educational market, the Concept Keyboard Company has developed a keyboard specifically for Commodore's range of Amigas. Now, teachers can use the Concept 2000 to support many educational projects on Amigas.

Designed to be used in conjunction with the qwerty keyboard, the Concept 2000 consists of a keypad with 128 or 256 user-definable keys contained in a moulded plastic housing. Using Think Overlay Designer Software, the Concept 2000 will support almost all current software packages. Dedicated pro-

gramming for specific tasks can also be accommodated.

Think's Overlay Designer is available direct from Think Limited.

The gridded surface of the board can be customised using standard A4 sized paper overlays to suit a wide range of applications.

Manufactured to be durable and robust, the Concept Keyboard has a flat, wipe clean surface resistant to most fluids. Typical board life is three to five million operations per cell.

Contact: The Concept Keyboard Company, Moorside Road, Winnall Industrial Estate, Winchester SO22 7RX Tel: (0962) 843322.



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FRAMEGRABBER

A new, fast, real time video image digitiser for the Amiga. "Marcam's Framegrabber currently represents the state of the art in Amiga video digitising technology . . . the quality of grabbed images is just amazing."

*Amiga Format magazine review,
February 1990.*

PRICE £530.00

FRAMEGRABBER

Framegrabber 2.0 has hundreds of new software features such as: shrink, zoom and magnifies to any size. Prints images directly from PG software, mirror image feature for creating silk-screen applications.

Framegrabber supports full 24-bit, true-colour images, and new file formats: DV-21, IFF-24 and config. Files. Several extra image processing features include sharpening & blurring as well as line-art and negatives of images. The new palette lock system matches palettes and facilitates use with Genlocks.

Marcam's Framegrabber is the answer to every Amiga owner's digitising dreams. Marcam's unit currently represents the ultimate in Amiga video digitising.

Amiga Computing - October 1990

THE BIG ALTERNATIVE SCROLLER

It's new, it comes in a black folder. Price: £49.99

It's simple to use, and it's here! The Big Alternative Scroller is now on sale. This is a self-contained titling programme on one disk. The software enables you to type in credits, titles, display information etc, and scroll them either vertically or horizontally on your monitor screen and likewise onto video tape.

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- PLUS the amazing COURSEMASTER SYSTEM BET. This superb easy to use betting system regularly provides our customers with MAJOR WINNS for small stakes - try it and amaze yourself. Will even PRINT OUT YOUR BETTING SLIP for you if you have a printer!
- COMPLETE WITH 20 PAGE BETTING GUIDE AND MANUAL.

DISCS AND TAPES £24.95

PERM-MASTER

If you enjoy doing the pools and regularly use perms as we at INTRASET LTD. recommend then checking your coupon can be a nightmare. Have you won or haven't you? Perm-Master ends the agony by checking your perm for you. Simply tell it which of your coupon numbers are draws and it will do the rest, telling you how many winning lines you have.

Perm-Master comes complete with several of the top perms already built in, but if your favourite perm is not there then simply create your own using the unique perm editor.

- Fast and simple to use
- Unique PERM EDITOR
- Create your own perm using the inbuilt perm calculator, test your own theories etc.
- For Most block and single line perms.

Price £19.95

SPOT-THE-BALL

For all SPOT-THE-BALL fans this programme is a must, no more tiresome counting of 'x's or messy rubber stamps. Use your computer to do your SPOT-THE-BALL coupon.

Just tell your computer where you think the ball is using the screen template supplied.

Will print out up to 540 micro-fine crosses in your chosen shape, or simply tell it to choose at random.

Learns as it goes - tell it where the ball is every week and build up a database of results to use in SPOT-THE-BALL's sequence predictor option.

Works with any Epson Compatible Dot Matrix printer or build your own printer driver using the on screen option.

LET SPOT-THE-BALL fill in YOUR COUPON this week.

SPOT-THE-BALL £17.95

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|-------|-------|-------|--------|
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OR PHONE/FAX AS ABOVE FOR LIGHTNING FAST SERVICE.
WE ACCEPT ALL MAJOR CREDIT/CHARGE CARDS.
SEND A S.A.E. FOR FREE SOFTWARE CATALOGUE

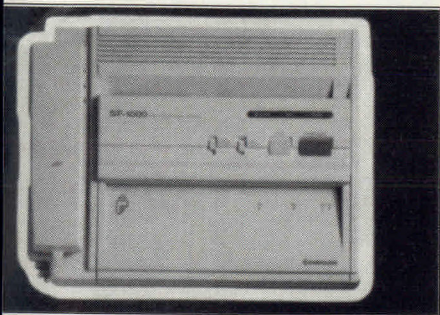
FAX UNDER £300

FAX prices have now fallen to just £299 with the Samsung SF1000. The fax is small, lightweight and designed to be easily portable.

It is available with or without the telephone, which offers abbreviated dialling to 9 locations, automatic redial, adjustable ringer volume and a tone/pulse switch. As a fax, it works in Group 2 or 3 mode and gives regular management reports.

Without the telephone, the SF1000 measures 330 x 254 x 107mm and weighs around 4KG. A carrying case is optional and there is a choice of three types of power supply.

Contact: Fax Samsung on 081 391 3050.



THE £299 FAX

Newspoint VIRUS ATTACKS COLD CENTRE

A student 'picked up' a virus through a disk used at a school, and infected the computer system at the Common Cold and Research Centre at the University College of Wales.

The WDEF type virus, first discovered in 1989 in Belgium, disabled the program researchers ability to survey world medical literature. Help was at hand when a copy of the Disinfectant Tool beat off the infection!

Local schools are one of the major sources of the common cold virus according to the Centre's director, but they didn't expect to have an infection passed in this way! WDEF causes menu bars to flash, bombs to appear on the screen and fonts to be disrupted. However as far as we know it doesn't cause the computer to sneeze! But maybe Version 2.0 will.

NEW JOYSTICK OFFERS BLANKET FIRE-POWER

If Logic 3's first product, the Sting-ray, looks like a futuristic lazer gun, then the company's second product, the Manta-ray, looks like an escape pod from the planet Zorg. Or so they tell us! The reason for the Manta-ray's extraordinary shape lies in the product's "wonderful ergonomics - this is quite probably the most comfortable joystick known to man " Well they would say that, wouldn't they? And what about known to women? (And what about women indeed Sir! ED)

Ashvin Patel, boss of Spectravideo, declares "In total, several million hand-held joysticks have been sold throughout the world. As a consequence, there is a great deal of information about the perfect ergonomic shape to give maximum comfort. The Manta-ray is the product of a considerable amount of data."

"Among other things, the Manta-

ray has been designed with digits in mind. The most popular digit when it comes to joysticks is the index finger " (Not many people know that!) "Many people however are not adverse to using their middle finger or thumb." (Really? Please don't tell us what for!) "The Manta-ray has 3 buttons, each perfectly positioned for the relative digit". (Daddy, Mummy and Uncle Digit?)

Ashvin Patel concluded, "The Manta-ray is the most comfortable joystick in the world - probably." (Sounds like doubts are creeping in!)

The standard Manta-ray retails for £12.99, the auto-fire £14.99.

Logic 3 tell us Manta-ray is also the name given to a fish, which looks like a huge blanket. it can measure as much as 20ft. across and has an unpleasant sting. (20ft.? A Huge Blanket? Doesn't sound much like a joystick to me! ED).



The joystick that doesn't look like a fish.

"Quote" of the Month

Found in the user manual of a Sanyo portable computer:

"There's a simple truth about computers and the people who use them. If you don't know enough, computers seem highly confusing. On the other hand, if you know a great deal, it probably means that you have spent too much time learning how to use them."

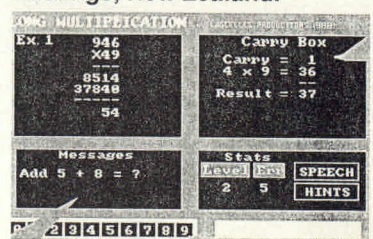
Can there be any connection between the ironic tone of that comment and the fact that the Sanyo portable with which this manual goes is exactly the one that Commodore has badged and is selling under its own name? No, of course there can't. None of us really misspent our early life playing with those PETs, Vic20s and 64s, did we?

BACK TO BASICS

Back to Basics is intended to teach primary children simple arithmetic in an easy way. The software contains a 32-colour screen of a series of blackboard work areas, numbers and menus. The child is presented with a series of 10 independent random exercises. He/she can quit, restart to exercise 1, printout results, get speech, get hints at any time by mouse. There is clues by printed message board, by voice synth., by position of cursor, by flashing digits. Responses are requested at each step of process.

Lascelles are offering packages for long multiplication, long division, long addition and subtraction, say 'n spell and word construction set. Lascelles say the series is ideal for 9-14 year olds.

Contact: Lascelles Productions, 401 Lascelles St. P.O. Box 959 Hastings, New Zealand.



SCAPEMAKER FOR MEGAGEM

MegageM have told **AUI** that they are bringing out ScapeMaker. ScapeMaker is, they say, "A powerful tool which converts any Amiga IFF standard graphics image into a landscape Digital Elevation Map(DEM) file for 3-d rendering with the Vista scene rendering package." ScapeMaker's landscape files are compatible with Vista, Vista 1.2 and VistaPro. The possibilities are, they say, "limitless"!

ScapeMaker's features include: Load/view Amiga IFF images, open adjustable-size window over the IFF image to select a region of interest; Fast conversion of region of interest (up to 258x258 pixels) to DEM file; Saves DEM file in Vista compressed format; File requesters for loading images and saving DEM files; Four modes of DEM file creation including elevation (relief) and depth (incuse); Variable maximum height (1-10,000) for incuse (depth) DEM files; Written in 100% assembler, ScapeMaker is compatible with all Amiga computers and AmigaDos 1.3 and 2.0. It interprets images in all graphics modes - including HAM.

ScapeMaker, say MegageM, converts the whole world of Amiga graphics - videotitles, scanned images, digitized images, drawn artwork, and more - to objects for 3-d rendering in Vista. For example, imagine digitizing a coloured 2-d topographic map from a book, then simply 'grabbing' a DEM with ScapeMaker and rendering it into a 3-d image or animated 'fly-by' sequence!

ScapeMaker is available now from MegageM for £29.95.

**Contact: MegageM 1903 Adria Santa Maria, CA 93454.
Tel: 805 349 1104.**

Newspoint

NACRO - National Association for the Care and Resettlement of Offenders - is appealing for the return of a stolen PC that contains the data it needs to carry out its tasks of helping ex-prisoners.

Thieves broke into the charity's office in Birmingham stealing an Amstrad PC, back-up disks and training materials.

Shame! Is there no honour even among thieves? (And what Fence is going to take an Amstrad anyway?)

BACK UP, PROFESSIONALLY, Say ELECTRONIC ZOO

European Electronic Zoo Ltd. have announced the release of the ultimate (Oh no! Not another 'the ultimate'!) backup system for the Amiga. "MRBACKUP PROFESSIONAL".

MRBackup Professional, say Electronic Zoo, is the first full featured backup system for the Amiga utilizing the total potential of the machine. With over 60 built-in ARexx commands, MRBack Pro-

fessional, Electronic Zoo, gives the user the ability to reach beyond standard backup options.

It is believed that this is the first fully featured backup system that has floppy and SCSI streaming tape capabilities.

MRBackup's features include: the ability to backup to floppy or SCSI streaming tape and has been tested with Commodore, Supra, Xetec, Cldt, Trumpcard and GVP controllers. It can utilize the option to use standard Amiga Dos or Fastdisk format. It has user selectable file compression - selectable up to 16-bit, and employs full AmigaDOS Intuition for ease of use. Floppy users can utilize up to four floppies. And it has full ARexx integration - over 60 usable commands.

The retail price of £29.99 say Electronic Zoo, is a small price to pay for peace of mind, and a copy of MRBackup Professional.

**Contact: European Electronic Zoo, Eliot Road, Love Lane Industrial Estate, Cirencester, Gloucestershire GL7 1YS
Tel: 0285 641 541**



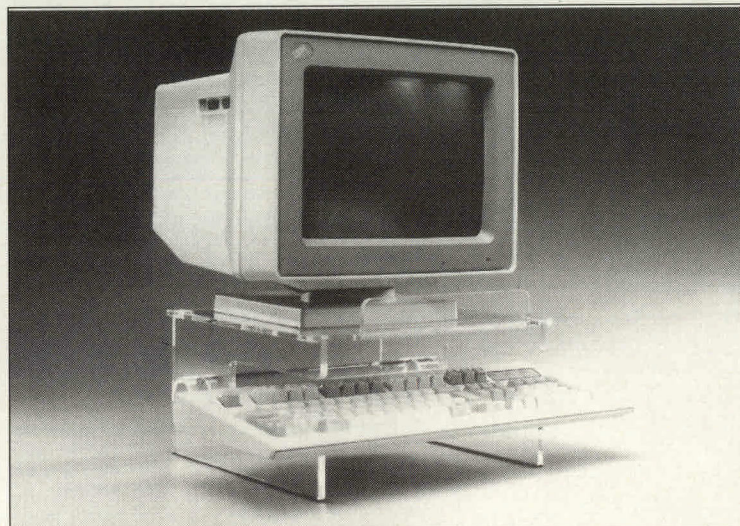
SEE THROUGH STANDS

A new range of desk-top printer stands and a new desk-top terminal stand, all made from tough 5mm transparent acrylic so that they are both robust and unobtrusive, are now available from Action Computer Supplies.

The terminal stand, which meas-

ures W300 x D350 x H150, and has a storage slot for keyboards. Price from Action is £43.80.

**Contact: Action Computer Supplies, Alperton House, Bridge-water Road, Wembley, Middlesex, HA0 1EH.
Tel: 0800 333 333.**



... SEE THROUGH STAND FOR ACTION

AMIGA ANCESTRY

GENP is a program to enable you to trace your ancestors. GENP version 1.5, the authors told **AUI**, has easy to use data entry screens and enhancements including 150 Context Sensitive Help screens to make the new features user friendly. GENP is claimed to have the most powerful searching of any genealogy program. New features are the Similarity Search and regular Expression Search.

GENP can now run ARexx programs or other user supplied programs automatically. This is in addition to GENP being able to display images in the standard IFF format. GENP is claimed to be the first genealogy program to support multimedia. GENP's multilingual capability has also been improved. It uses the full Amiga character set and so can handle most European languages. It supports non-English language screens, system messages, help screens and data dictionary. So if you want the Amiga to help you trace your ancestors - who never dreamed that wondrous machines like the Amiga could exist, **Contact: GENP, 37, Charles Street, Cheltenham, Victoria 3192 Australia.**

SOFTWARE COMPANY SHAKEOUTS EPISODE FOUR. . . . NOW READ ON

Central Coast Software, one of the most creative of the longtime Amiga developers, has been taken over by the Texan company, New Horizons, renowned for their Prowrite word processing package.

Central Coast Software (CCS), who are based in Colorado, are known for their line of powerful utilities for the Amiga which have brought it the ability to communicate with both MSDOS and Mac computers. Dos-2-Dos and Mac-2-Dos are the leading emulation programs for the Amiga.

CCS has also been successful with its highly-regarded Quarterback which thought to be the most widely-used Amiga hard disk backup program. There is also Quarterback Tools, a set of disk utilities.

CCS is to become a division of New Horizons, James Bayless, President of New Horizons told **AUI**.

The CCS takeover by the bigger and better marketing company like New Horizons is seen to be an increasing pattern in the U.S. says U.S. industry watcher Joe Gene Parris. "Unlike on the European side of the Atlantic, the Amiga is having a rough time in the U.S.A. Commodore has just not been able to sell Amigas recently in any reasonable quantities. It has, if anything, a reducing user base. The kind of family that might buy an Amiga in Europe will buy a PC in the U.S. And maybe the kid that wants a hot games machine won't get a computer but a games console. You could see, except for the hardcore hobbyists, the Amiga turning into a European computer, which is why Commodore is going all out to make the CDTV its main U.S. product."

GVP Jumps into Lake

Another straw in the wind, or in the water, of the same somewhat depressing U.S. picture is the acquisition by GVP of Lake Forest Logic, creators of Macropaint and Adapt Assembler (reviewed in this **AUI**).

Lake Forest Logic with a reputation for inventive and high quality software has clearly found today's water too rough and accepted a takeover offer from GVP, better known for their hardware such as

hard drives and accelerator boards. GVP's motives in taking over a small software company are not revealed but it may be so that it can bundle some of Lake Forest Logic's software with their own products. While not booming, according to Joe Gene Parris, the hardware side of the Amiga in the U.S.A. is holding up well. "Everyone today wants to be a poweruser," he says. "Anybody who is using the Amiga for anything but games today needs speed and power so the hardware guys are still finding a market, especially in the video field where NewTek's Video Toaster has brought Commodore a deal of spin off attention. There's even a lot of hunger out there for the 68040, when Motorola can deliver it in anything but minute quantities, as at present. They've fallen about a year behind and that can mean a lot of lost business to companies like GVP and CSA if people wait around for an oh forty and don't buy 68030s."

It can be even worse for good but small companies like CCS and Lake Forest Logic if the U.S. public doesn't buy Amigas at all.

Loss of Virginity?

No, this doesn't refer to the lovely Lesley ("Million Dollar Legs") Walker, PR Princess of the Richard Branson empire. We all know that Purity is the only thing that turns her on. But to The Sega Connection, the part of the Virgin business that churns out cash as if it were the Mint itself. When Nick Alexander, Richard Branson's top Honcho in the software business, picked up the licence to distribute Sega products in the U.K. not too many people thought Virgin was sitting on a fortune. Yet half way through a five year contract, it is clear that flying to Boston and facing off Mrs Thatcher's favourite monopoly capitalist, British Airway's Lord King, are not the only ways Virgin can coin in the readies.

Sega is now the best selling games console in the U.K. and now, as the console boom takes off like some supercharged flight sim, who should be casting lecherous, dollar-signed eyes over Virgin? None other than Japanese giant, Sega itself. There are hot rumours

that Sega is going to buy out a big piece of Virgin action for some huge wads of yen.

Why should Virgin sell? For cash, a very useful aid to buying new balloons in which to float over large expanses of the globe. And why should Sega buy? For more cash. It needs to pump a goodly flood of banknotes into the promotion of Segas to keep the Nintendo wolf from the door and when someone puts up big piles of green ones, they usually do it to gain even bigger piles.

The rumours are that Sega will not only take over a tidy lump of the Virgin electronic games area but some

of the people too, particularly Virgin's Sega Honcho himself Nick Alexander. Worse still, those lovely Walker legs may be twinkling their glamour silkily on unvirginal Sega territory soon too.

CCS, Lake Forest Logic, even Virgin, is the whole of the industry as we know it to be deflowered? Will we, like John Major in the U.K. Recession, which the software industry says is causing the worst drop in business since 1980 - when most of the industry didn't even exist - be judged as innocent bystanders or the accident itself? Only time, and of course, **AUI** will tell.



No, this is not a software boss begging for business but the designer of a new game which the company that created it thought should have the player torturing information out of prisoners. To illustrate the point they sent us this stupid photo. Shoot 'em up violence is bad enough without this kind of disgusting idea about torture. There is more than enough in the world as it is, just ask Amnesty. So we definitely won't give the game the desired publicity. The man on the left is the late Michael Baxter, once known for his acceptable PR activities. Torture as a game... Some parts of our software industry could certainly do with a good shakeout.

Newspoint

LIBERTY ATTACKS IT.

The civil liberties group, Liberty, has asked the Home Office to set up a comprehensive inquiry into police use of computer systems. The group criticises the lack of adequate safeguards against wrongful disclosure in a report on the criminal record and information system. It claims that the growing scope and access to computerised police information has developed unchecked by public scrutiny.

A large proportion of records held concern 'criminal intelligence information'. But research shows that the success rate from using information from computerised criminal intelligence systems is very low. There has been 'a noticeable increase in the number of complaints about police officers using the police national computer' for unauthorised activities, according to the latest Police Complaints Authority's annual report.

THE DISK MECHANIC

Lake Forest Logic have released The Disk Mechanic, a collection of utilities for Amiga DOS, including TuneUp, DoubleBack, DiskRepair and Workshop.

TuneUp: With TuneUp, say Lake Forest, you can improve hard disk or floppy disk performance by up to 400%. Not a cacheing program, TuneUp is a re-organised disk optimiser that re-organises the information on the disk to improve system efficiency. TuneUp is fully compatible with Amiga DOS.

DoubleBack: DoubleBack is a high speed archival hard disk back-

up program. DoubleBack supports multiple source and destination drives, file selection by name, date, protection, directory and file note. You can back up a full 20 megabytes in under 40 minutes and selectively copy files between hard disks and partitions. Protect your data!

DiskRepair: With DiskRepair, Lake Forest say, it is possible to recover accidentally deleted or discarded files from damaged disks, and reconstruct a corrupted hard disk. DiskRepair works with hard and floppy disks and is compatible

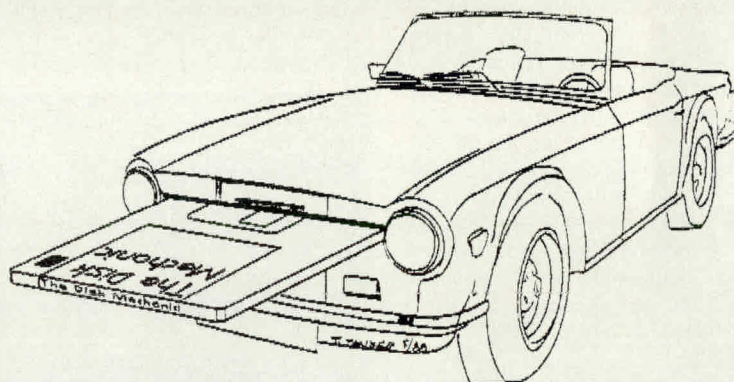
with the Fast Filing System.

WorkShop: For the expert user, the disk WorkShop is a full featured disk file and block editor. Examine and modify disk files, search for viruses and change menus or requesters in popular programs.

The Disk Mechanic also includes a dozen small CLI based utilities to make managing disks easier. Lake Forest say they are releasing the version 2.5 with full support for Amiga DOS 1.3 and the Fast Filing system. The Disk Mechanic is not copy protected.

Price \$89.95.

Contact: Lake Forest Logic Inc. 28101 E Ballard Road, Lake Forest, IL 60045. Tel: (708) 816-6666.



786 - A LOT OF HYPE?

Intel has predicted the development of an 80786 chip by the turn of the century, containing 100 million transistors and running at 250 MHz. The company, using information from BIS CAP International, also predicted that its architecture will account for 85 per cent of user spending by the year 2000, a claim which was immediately ridiculed by Motorola, who manufacture the Amiga's 68000 chip range.

The 786 chip will arrive by the year 2000, said Hans Geyer, European manager for components marketing, following the 586 in 1992 and the 686 a few years later. 786 chips are likely to have 100 million transistors, compared to one million on the 486.

Possible uses for the chips will include the capacity for handwriting and voice input, and on-board comms support.

A Motorola spokesman dismissed Intel's market projections, which would see it more than double its present market share. "Motorola's micro controller architecture and 68000 and 88000 chips will grow significantly over the next ten years. Risc architecture accounts for an awful lot of business, and to state that all those things will have only 15 per cent of the market between them by 2000 is a lot of hype", he said.

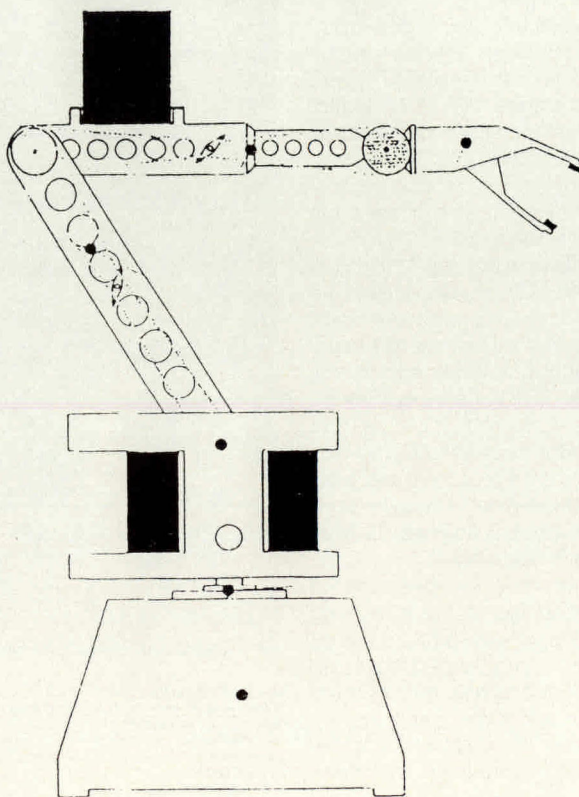
Think Robotics

Think Limited, creators of the Concept Keyboard, are releasing an interesting low cost robot which is designed for schools and colleges. It is intended to teach the principles of robotics through software that provides for the learning, storing and replaying of robot movements so that a complete sequence can be built up in steps. The system parallels effectively the use of larger robots in industry.

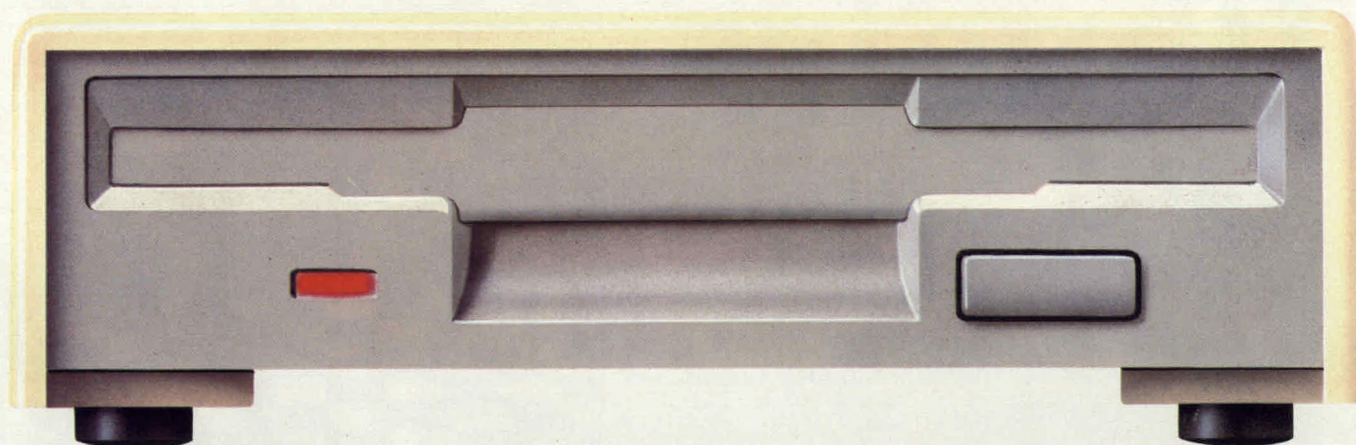
The robot is called ALFRED. Made of plastic and metal, it is an exact replica of robots in use in industry - the R2000 and Mars robots, though, of course, it cost very much less. In fact, at about £350 it is less than one tenth of the cost.

Ian Black of Think Limited told **AUI** that already there are enquiries coming in from other parts of Europe and especially from the Scandinavian countries which have strong training programmes.

Think are also soon to launch a Pictionary, a graphically based learning tool for young children and also an educational jigsaw program.



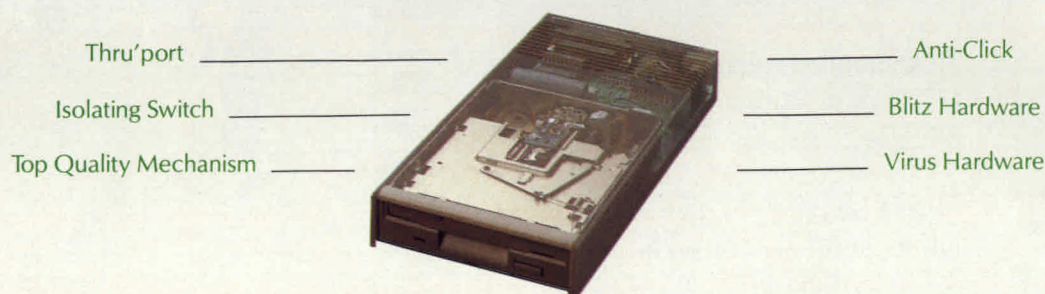
Where you can stick it.



Viruses, disk swapping, clicking drives, disks which won't back up. Is there no end to the whingeing of the Amiga user?

At Power, we want to tell you just where you can stick your disks and worries. In fact we will show you. The slot in this picture belongs to our PC880B, the first intelligent disk drive. Insert a disk.

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The PC880B, the only drive to introduce Blitz Amiga, the power anti-click device and to combat viruses, is only available direct from Power, priced at just **£65**.

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Amiga Repairs

If something is wrong with your Amiga 500 or C64, who better to turn to than the National Repair Centre.

For all repairs to your computer, one low payment covers diagnosis, repair (including parts and labour) and delivery back to you.

The experience and expertise of our technicians ensures that your computer is repaired to a high standard at a low cost. And each repair will be carried out within 12 working days!

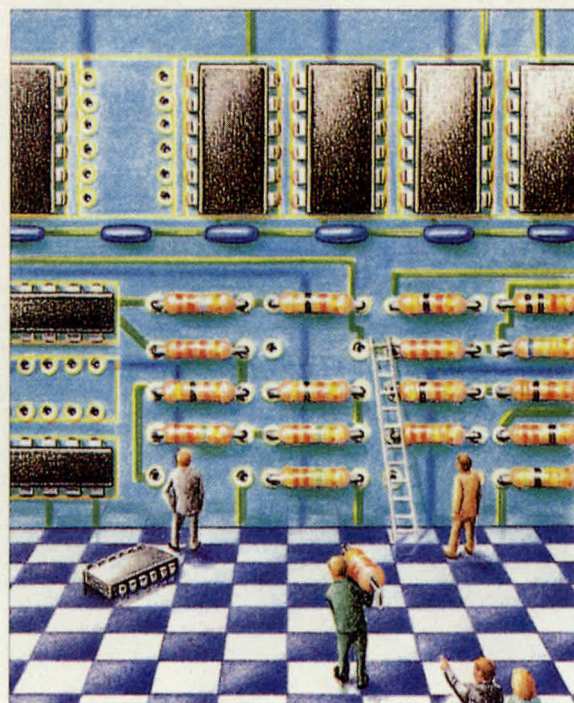
To schedule a repair, simply call Michelle or Audrey on 0733 391234.

Please be ready to give your name, address, computer type, serial number and the type of fault.

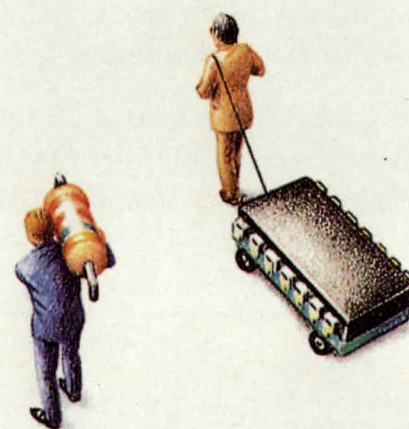
The cost is £57.45 for an Amiga 500 and £47.45 for a C64. Payment can be made by cheque, postal order or credit card..

0733 391234

FMG House
Newcombe Way, Orton Southgate
Peterborough PE2 0SF



AMIGA REPAIRS



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Now you can get the best... with PEN PAL!

A superb package, with immense power, to fulfil all your word processing requirements and... it includes a Database! It's all so easy to use, you probably won't need to refer to the extensive 250 page manual too often.

Whilst working, you can open up to four documents simultaneously (memory permitting), search and replace; cut, copy and paste; check your spelling with a 100,000+ word dictionary. You can import your favourite IFF/HAM graphics, from programs such as DPaint II or Clip Art files in various sizes and colours. You can automatically flow text around graphics in any Workbench compatible font (there are over 200 available styles), in different sizes and colours to suit your design... even as you type. All this from a word processor and... Much, Much, More!

As you can see, this is not just any ordinary word processor! Full Page View with position, edit and creation of graphic objects. Mail Merge using the built in database and forms designer. Creation of templates for complex reports, into which the database can be merged.

Operating with 32 fields per record, and 32,000 records per database with a fast sort of 1000 records in less than 5 seconds this is a *real* database.

Pen Pal requires an Amiga 500/1500/2000 or 3000 with a minimum of 1megabyte of available memory.

Pen Pal

When...you deserve the best!

£79.95

"...its handling of graphics is unsurpassed: Pen Pal is the only program I tested that will automatically wrap text around graphics..."

Amiga World...Jul. '90

"...without beating around the bush Pen Pal is very special..." - "There is little to fault Pen Pal and it deserves to do well."

Amiga Format...Dec. '90

"...I am extremely pleased with your product especially the Graphic Capabilities within the Word Processor. Having the Database on the same disk has made PEN PAL the best program I have..."

D.S.B., Plumstead, LONDON

"...Please let me tell you how amazed I am at how EASY IT IS TO USE PEN PAL. The manuals supplied are very informative and very clear..."

P.S.S., Clifton, NOTTINGHAM

"...A most excellent piece of software..."

E.P.H., Strathclyde, SCOTLAND

Gordon Harwood Computers
New Street
Alfreton
Derbyshire
DE5 7BP

Dear Sir,

Hello! I am writing this letter using "Pen Pal". Normally I do not correspond with computer companies, but this time I had to make an exception.

I have been looking for a program that I could use to create colourful letters, useful forms, and effective business graphics. I have purchased several Amiga word processors whose ads made great claims as to their capabilities. After using these programs, however, I found that the ads were only hype! I soon began to feel that no program would do what I wanted to do.

Recently I saw your program "Pen Pal" on my dealer's shelf. According to the package I thought that I might finally be in luck. Although I purchased the program I was afraid that in reality it would not do everything the package claimed. As soon as I got home from the computer store I fired up the program on my computer. Without even reading the manual I was soon creating documents with colour and pictures. As you can see from this letter, I have become pretty good at your program's graphic capabilities.

One pleasant surprise I had was to discover that Pen Pal has a built in database manager. I find that I use this database almost as much as the word processor. I have entered my Christmas mailing list, video tape library, and cooking recipes in as well as my Christmas cards. I plan to use Pen Pal to print the mailing labels. I am designing my own Christmas cards in Pen Pal including some pictures I drew in a paint program. I plan to use Pen Pal's mail-merge feature to merge my mailing list names with the card to make each one personalized.

Thank you for making this program available.

Mr. Richard Goodwin

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|---------------------------------------|----------|---------|----------|---------|--|
| OPERATING EXPENSES | | | | | |
| Cost of sales | 288,170 | 28,180 | 382,350 | 36,390 | |
| Selling, general, and admin. | 364,439 | 92,100 | 475,540 | 167,836 | |
| Research and development | 46,269 | 14,815 | 89,567 | 26,289 | |
| Income from operations | 312,304 | 112,531 | 585,386 | 285,298 | |
| Equity in loss of S.M. operations | (15,891) | | (21,813) | | |
| Interest income | 7,247 | 5,337 | 18,817 | 6,241 | |
| Income before taxes | 303,660 | 117,868 | 574,390 | 211,531 | |
| Provision for taxes | 113,500 | 31,000 | 217,500 | 31,100 | |
| Net income | 190,160 | 86,868 | 356,890 | 180,431 | |
| Net income per share | 58.17 | 58.06 | 58.31 | 58.11 | |

... and they are better than expected!

In the first quarter of 1988 each division took advantage of strong economic conditions in their respective territories to post sales figures well in excess of their goals.

Pen Pal is supplied into the UK through...

Gordon Harwood Computers New Street Alfreton Derbyshire DE5 7BP
Telephone: 0773 836781 Facsimile: 0773 831040



star Printers

| Star LC24-200 | Star LC24-200 Colour | Star XB/24-10 Colour |
|--|--|---|
| £244.99 24 Pin printer 222 cps 5 Resident LQ fonts Accepts font cartridges Bottom feed Push or pull tractor feed Paper parking | £299.99 24 Pin printer 222 cps 5 Resident LQ fonts Accepts font cartridges Bottom feed Push or pull tractor feed Paper parking | £339.99 24 Pin printer 48-pin emulation technique 240 cps 4 SLQ 25 LQ resident fonts 27K buffer expandable to 187K Colour upgrade included Advanced paper parking |
| Star LC24/10 Star LC-10 Citizen 120D+ Star LC-200 Colour Star NB/24-10 special offer | £199.99 £139.99 £134.99 £209.99 £200 | All Star Printers carry 12 months on site warranty (Mainland UK). All printers include IBM Centronics cable. Phone for ribbons, paper and printer stands. |

Please Read: Terms of Sale.

We are the longest established Atari dealer in the UK. We have developed an extensive customer service policy which means that we test all Hardware/Software prior to despatch to ensure that goods arrive in working order. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup. This isn't just our opinion, we were voted "Best Dealer 1989" by the readers of ST World magazine, not for "the number of boxes shifted", but for quality service.

On Site Warranty: We have recently extended our backup programme by offering on site warranty as an option on all ST's. We already offer this service on, All Star printers and Philips monitors listed.

All prices are correct at copy date 09/07/91 and are subject to change without prior notice. All prices are accurate while stocks last. Phone for up to date prices. All prices include VAT, there are no hidden extras (WYSIWYG). Delivery (in Mainland UK) is free, on orders over £100 (add £10 for next day courier delivery. All prices available on Mail Order. Shop prices may differ.

RAM Upgrades

| | |
|---|--------|
| 512K Board | £26.99 |
| With clock | £29.99 |
| 1.5Mb Upgrade with 512K installed | £55.99 |
| 1.5Mb Upgrade with 1Mb installed | £72.99 |
| 1.5Mb Upgrade with 1.5Mb installed | £88.99 |
| The Zydec 1.5Mb upgrade board requires a connection to the Garry chip and Kickstart 13 installed. Includes clock. | |

Quality Disks

| Quantity | Bulk Sony or Kao | | Sony Brand Boxed in 10's |
|----------|---------------------|--|-----------------------------|
| | Loose | Boxed | |
| 10 | £ 4. ⁹⁹ | £ 5. ⁹⁹ Includes x10 Ryford black plastic box | £ 8. ⁹⁹ |
| 40 | £ 19. ²⁰ | £ 25. ²⁰ Includes x40 Lockable, disc box | £ 32. ⁴⁹ |
| 100 | £ 44. ⁹⁹ | £ 53. ⁹⁹ Includes x100 Lockable, disc box | £ 79. ⁹⁹ |
| 150 | £ 59. ⁹⁹ | £ 76. ⁹⁹ Includes x150 Stackable disc box | £ 118. ⁴⁹ |

All disks carry an unconditional lifetime guarantee. Please add 80p P&P for each 10 disks or £3.00 for 100 and above.

Roctec drives

- ★ Data enable/disable switch
- ★ Daisy chain "through" connector
- ★ Low power consumption

Now Only £54.99

Please add £3 P&P

A4 Scanner

- ★ 200 DPI scanner, thermal printer, and photocopier.
- ★ Upto 16 grey scales or B/W mode.
- ★ Compatible with Amiga and ST.

£399.99 while stocks last

Hard Drives

GVP II A500 Hard drives include injection moulded styling, internal RAM expansion to 8Mb via SIMM boards, Capacities from 52Mb, 3.5" 11ms Quantum mechanism, Internal Fan, Game switch and mini slot for future expansion.

| | | | |
|----------|---------|-------------------------|---------|
| GVP 52Mb | £549.99 | GVP 105Mb | £669.99 |
| A590 | £299.99 | Phone for latest prices | |

Goldstar PC's

All systems include 12 Mths on site maintenance and DOS 4.01

| 286 -12MHz | Mono VGA | £734.99 |
|---|--------------|----------|
| 1Mb RAM supplied, upgradeable to 4Mb, 80287 Co-Processor socket, 40Mb 24ms Hard drive, 4x AT and 1x XT free expansion slots, Mouse, GEM 3, 1st Word, choice of 1x 5.25" floppy or 1x 3.5" floppy. | Colour VGA | £839.99 |
| | Colour S-VGA | £839.99 |
| 386 _{xx} -16MHz | Mono VGA | £1049.99 |
| 2Mb RAM supplied, upgradeable to 8Mb, 80387sx Co-Processor socket, 40Mb 24ms Hard drive, 4x AT and 1x XT free expansion slots, Mouse, choice of 1x 5.25" floppy or 1x 3.5" floppy. | Colour VGA | £1159.99 |
| | Colour S-VGA | £1259.99 |
| 386 _{xx} -20MHz | Mono VGA | £1259.99 |
| 2Mb RAM supplied, upgradeable to 10Mb, 80387 Co-Processor socket, 40Mb 24ms Hard drive, 4x AT and 1x XT free expansion slots, Mouse, 1x 5.25" floppy and 1x 3.5" floppy. | Colour VGA | £1369.99 |
| | Colour S-VGA | £1469.99 |
| 386 _{xx} -25MHz | Mono VGA | £1789.99 |
| 4Mb RAM supplied, upgradeable to 16Mb, 32K Fast cache RAM, 80387 Co-Processor socket, 40Mb 24ms Hard drive, 4x AT and 1x XT free expansion slots, Mouse, 1x 5.25" floppy and 1x 3.5" floppy. | Colour VGA | £1889.99 |
| | Colour S-VGA | £1999.99 |

Monitors & TV's

| | |
|---|----------|
| Philips 8833 MK II Colour, Stereo monitor | £ 249.99 |
| Cmdr 1084S Colour monitor * limited offer * | £ 269.99 |
| Philips 15" FST CUBE TV | £ 269.99 |

The Philips 15" FST TV includes: remote control, Scart input, 60 tuner presets, sleep timer and Fastext. All displays include Scart cable. Deduct £10 from Monitors only, if bought with computer. The Philips 8833 comes with full 12 months on site warranty.

CDTV £599.99

Commodore Dynamic Total Vision

Titles in stock

World Vists, Electronic cook book, Advanced military systems, Battle storm, Classic board games, All dogs go to heaven, Fun school 3 (under 5's), A bun for Barney, Illustrated Holy Bible.

CDTV In stock now

includes Welcome disk, Encyclopedia and voucher for Lemmings. Phone for further details.

How to Pay

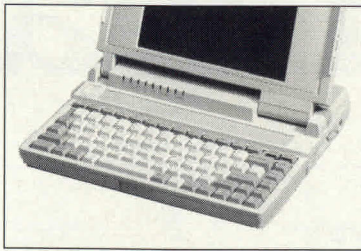
You can phone your Access or Visa card details or send a cheque/postal orders made payable to Ladbroke Computing International. Please allow sufficient clearance time for cheques.



(0772) 203166 Fax 561071

Shop & Mail order premises: 33 Ormskirk Avenue, Preston, Lancashire, PR1 2QP Open Monday to Saturday 9.30am to 5.00pm. Phones answered from 9.00am. Dealer enquiries welcome. Ladbroke Computing International is a trading name of Ladbroke Computing Limited. All trade marks recognised.

PCs DOWN, PORTABLES UP



Small computers to get bigger share

Figures released by research firm Romtec show that growth in the UK PC market will continue to fall in 1991, dropping to 11 per cent from a growth rate of 20 per cent last year.

The strong slowdown experienced towards the end of 1990 is expected to continue into the first half of this year, but Romtec predicts growth recovering towards the end of 1991. However forecast growth for 1992 shows only a slight increase to 13 per cent.

The report predicts the strongest growth will occur in the portable and multi-user PC sectors, eroding the dominance enjoyed by the single-user desktop PC. Romtec expects portables to grow from an estimated 11 per cent share to 20 per cent of the PC market by 1995. The major share of the growth in portables will occur in notebook sales because the laptop market is expected to peak this year.

MONARCH PRICE

It was not clear in the June *AUI* Newsfile that the new Monarch workstation's price is £84.80. A side extension, top shelf, and catch basket bring the price to £146.00.

Contact: Action Computer Supplies Tel: 0800 333333

Newspoint

Kokusai Denshin Denwa, Japan's international carrier, plans to begin transmitting newspapers by facsimile to ships at sea using an Inmarsat satellite. About 1,000 Japanese ships currently use Inmarsat for communications.

MEDIAPHILE TIME CODE EDITING

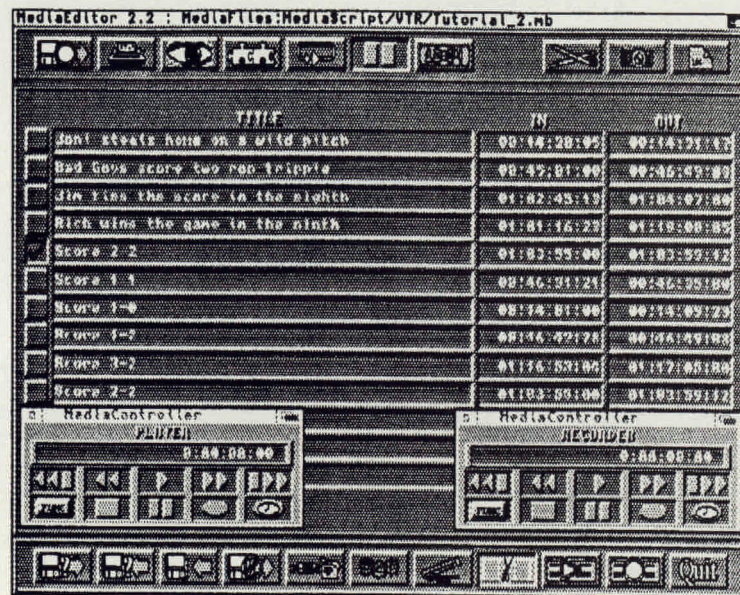
The MediaPhile Desktop video production system now offers frame accurate EBU and SMPTE time code editing. Edit decision list commands control Digital Creations genlocks, video decks, camcorders, and infrared devices, such as compact and laser disk players to produce professional quality video tapes. The MediaPhile system works with all PAL consumer and professional VHS, SVHS, 8mm, Hi8mm and Beta video equipment, and a new line of industrial video deck controllers is in the works. Control is

from any Amiga computer.

Multimedia device control from Amiga Vision, CanDo, Showmaker, the Director and other popular presentation programs is carried out through an AReXX interface to the MediaPhile executive library. A Programmer's Toolkit is also available for BASIC and C-Language programmers.

Complete three-deck video production and presentation systems are available from \$470(US).

Contact: Interactive MicroSystems, 9 Red Roof Lane, Salem, NH 03079, USA.



FLETCHER FONTS

PD Soft are releasing Fletcher Fonts and Clip Art, six disks with a varied assortment of coloured fonts in many different colours, sizes and shapes. Each compilation (Pack) of Fonts is Licenceware from PD Soft. These Fonts go with DPaint III and can be easily loaded into E.A.'s packages. Contact: PD Soft, 1 Bryant Ave, Southend-on Sea, Essex, SS1 2YD. Tel: 0702 466933.

FLETCH
LIVES
OK

Newspoint

According to a new report 'Computer Security In Banking', the vast majority of computer frauds can be avoided with the installation of better procedural controls and more effective computer security. The 50,000-word £125 report quotes detective-superintendent Don Randall of the City of London police's fraud squad, as saying: 'I certainly think that computer users are to blame for having made the fraudster's job easier. So often we find that a computer fraud could have been prevented if the users had taken more care

TINY CLAIMS TINIEST COMPUTER

The world's smallest PC" say the Tiny Computer Company is now being sold. The Tiny measures 210mm x 73mm x 133mm, and costs £299 for the TC1 10MHz V30 single floppy model, and £599 for the TC3 12MHz 286 40MB version. Both come with a TV PAL modulator so users have the choice of either a standard monitor or a television screen.

Guten Tag, Amiga

Germany is probably the country with more Amigas than any other. It is also producing some outstanding Amiga hardware and software. Hartmut Schumacher continues to highlight on some of the best.

Part 2

MemoryMaster

The "MemoryMaster" is a RAM expansion for the Amiga 2000. It uses 4 MBit chips and is available with 0, 2, 4, 6, or 8 MByte FASTRAM. The RAM chips can be used in the Amiga 3000 if you should upgrade to this dream machine of every Amiga user. Of course, this expansion auto configures and may be switched off. The board by itself, with 0 MByte, costs £99, for £149 you get the version with 2 MBytes. There is also an external model for the Amiga 500 which costs £17 more than the Amiga 2000 version.

PictureManager

The "PictureManager" is a professional tool for producers of computer animations. It allows the user to edit digitized, painted or ray-traced animations by cutting, copying, and pasting single frames and thus rearranging their order.

To make this task easier for the Amiga and to achieve maximum control over the frames of the original animation they are reduced and converted to black and white pictures during the editing process. Via the joystick today you can address a video cutting machine.

The program supports the formats of the following programs: "Deluxe Paint III", "Sculpt 4D", "Turbo Silver", "Imagine", and "VideoScape 3D" and should be interesting and useful for many Amiga owners.

The requirements and the price of this program are as professional as its efficiency: 2 MByte RAM are necessary and a hard disk is very recommendable to use the "PictureManager", which costs £143.

bsc bueroautomation AG

Lerchenstrasse 5

8000 Muenchen 50

Germany

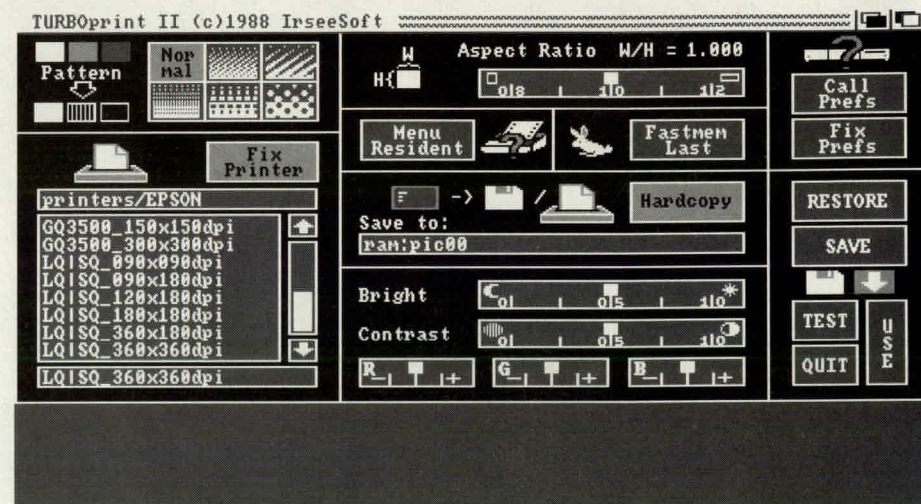
Tel: (0 10 49) 89 / 3 54 49 62

Video-Backup - the low cost streamer

A hard disk is a great thing. A hard disk with an additional streamer is a great AND safe thing. But - as you may have noticed while reading about the "A.L.F.-Streamer" in the last paragraph - a streamer is also quite expensive.

Of course, you could use floppy disks to back up your hard disk - but everyone who

"A VCR is a tape streamer too, if you think about it"



"TURBOprint II" and "TURBOprint professional" improve the quality of your black and white or colour print-outs.

even once has done a floppy disk back-up of a 40 MByte hard disk knows this is neither fast nor funny.

But there is a method that is not as expensive as a streamer or as inconvenient as a floppy disk back-up:

Today, a video recorder isn't such a luxurious and unusual machine as it used to be a few years ago - this is especially true for technical interested people who also own a personal computer. A VCR is a sort of streamer too if you think about it. A clever device from Weisgerber aptly named "Video-Backup" makes it possible to back up your hard disk on normal VHS video tapes.

You just have to connect the Amiga video port and its serial interface with the SCART socket of the VCR. There is a through port to connect your monitor again, so of course you don't need to operate blindly. The necessary back up software may be installed on your hard disk.

You need about half an hour to back up a 40 MByte hard disk (plus the same amount of time to verify the recording). This is, of course, slower than a "real" streamer, but faster than a back-up on floppy disks - and you don't have to baby-sit your Amiga to continuously change disks: just start the back-up recording and go drink some coffee (or whatever you prefer to drink); you can't use the computer while backing up; its famous multi-tasking is disabled. If you don't want to back up the whole hard disk or a whole partition the new

version 2.0 of this software which is now available also allows you to back up selected files only.

This method isn't very sensitive to the quality of the VCR: even a rather old recorder will do (provided it's a PAL type). But the system is quite touchy concerning the tapes, therefore you should use only new high quality video tapes.

If you have just bought a hard disk, are concerned about data safety, and already own a video recorder then the £66 you have to pay for the "Video-Backup" are a recommendable investment.

An English language manual should be available by now.

Contact:

Weisgerber Hard & Soft

Rathausstrasse 2

6551 Fuerfeld

Germany

Tel: (0 10 49) 67 09 / 7 78

Gigatron - an internal hard disk for the Amiga 500

Gigatron claims to have developed the "smallest hard disk of the world" - and consequently named it "Arriba" (referring to the rather famous Mexican cartoon mouse). And small it is indeed: 100 x 70 x 15 mm, weighing just 180 grams (that's about 6.35 ounces). In this small box there is a 2.5 inch hard disk with a capacity of 20 MBytes.

The surface mounted designed controller

board of the hard disk is placed in the processor socket of the Amiga 500, and the hard disk itself is fixed to the sheet metal inside the computer.

The "Arriba" allows autobooting with Kickstart 1.3. If you still use Kickstart 1.2 you need to remove a jumper on the controller board and have to use a boot disk. The installation software is easy to use and has an English user interface.

You can connect a LED which indicates the hard disk's activities, but it is also possible to use the program "ARRIBA-LED" which emulates this LED in the current Workbench window.

The speed of the "Arriba" is just about average - but a little faster than the A590 from Commodore. Since there is no ventilator, the noise the hard disk produces is very low; you can barely hear it. But perhaps a ventilator would not be too bad: I heard that some people have had heat problems with

outs of a quality which comes very close the brilliant pictures you admire on the Amiga monitor.

We have already reviewed these programs in the April issue of *AUI*, so here is just a short summary of the programs' features:

"TURBOprint II" (which costs £33) works quietly in the background and supports every other program that would normally use the original Workbench printer drivers (such as "Deluxe Paint" or "DigiPaint"), so that the print-outs of these programs are accelerated and are of a remarkably better quality.

You may adjust the brightness and the contrast of the print-outs as well as the height and the width and even the intensity of the three basic colours. An anti-aliasing function smooths sharp edges of diagonal lines. Colours can be converted into six different grey patterns.

But even without any other graphic program you can use "TURBOprint II" to print

"TURBOprint II" works quietly in the background and supports every other program that would normally use the original Workbench printer drivers"

COMPEDO - Amiga style fashion

Sure, you can produce great pictures with the Amiga, and (with "TURBOprint") even get a decent print-out on paper. But ... isn't this a little boring after a while? What about a T-shirt with the logo of your computer club on it or with the portrait of your girl friend?

The special ink ribbons of COMPEDO make this vision possible - and the best thing is, you don't have to stuff the T-shirt into the printer slot to achieve this.

All you have to do is to install the COMPEDO ribbon cartridge and then do a normal print-out on paper. (You have to mirror the picture either with a paint program like "Deluxe Paint" or, if this is not possible, with the mirror function of "TURBOprint Professional".)

Using a normal iron, you can then transfer the print-out to T-shirts, jackets, cushions, handkerchiefs, table-cloths, or umbrellas - to nearly any textile material as long as it consists partly of synthetic fibres. The pictures are laundry-proof: At the first washing all the colour that was ironed to the non-synthetic fibres is washed out (but this doesn't diminish the intensity of the picture). After that, the colour does not fade out any more: I washed a T-shirt, that I embellished with a COMPEDO ink ribbon, about a dozen times and the picture still looks as it did on the first day.

COMPEDO ink ribbons are available in red, yellow, blue, pink and black. They prices range from £12 (for the Star LC 10) to £14 for the Nec P7+. If you are lucky enough to own a colour printer there are also 4 colour ink ribbons which cost from £15 to £20. A ribbon can be used for fifteen to twenty print-outs.

But this is not all COMPEDO has to offer: For £6 you get a set which consists of a special lacquer, a brush, and a heat-resistant adhesive ribbon. With these utensils you can transfer your painted or digitized pictures to ceramics, china, glass, mirrors, and metal. Just lacquer the item, use the adhesive ribbon to stick the print-out to the item and burn it in a baking-oven for fifteen minutes.

The UK distributor of the COMPEDO products delivers them with English instructions.

Contact:
Compedo
Postfach 1352
5860 Iserlohn
Germany
Tel: (0 10 49) 23 71 / 4 10 71
or
Performance System Ltd.
Phillip Breindel
27 Merryfield Close
Boreham Wood
Herts WD6 4PL

Address omitted from last month
Maxton Computer GmbH,
Schwalbacher Strasse 52,
6236 Eschborn
Germany
Tel (010 49) 6196 48 1816

GERMANY'S TOP 20

| Top 20 Pos | Title | Publisher | Last Month |
|------------|------------------------------|-----------------|------------|
| 1 | Lemmings | Psygnosis | 3 |
| 2 | Secret of Monkey Island | Lucasfilm | 5 |
| 3 | Pirates | Microprose | 1 |
| 4 | Great Courts II | Blue Byte | 11 |
| 5 | Cadaver | Imageworks | 9 |
| 6 | Powermonger | Electronic Arts | 9 |
| 7 | Speedball II | ImageWorks | 10 |
| 8 | Kick Off 2 | Anco | 14 |
| 9 | Sim City | Infogrames | 7 |
| 10 | Populous | Electronic Arts | 8 |
| 11 | Falcon F-16 | Mirrorsoft | 4 |
| 12 | Indiana Jones | Lucasfilm | 13 |
| 13 | North & South | Infogrames | - |
| 14 | Rock 'n' Roll | Rainbow Arts | 6 |
| 15 | Wings | Cinemaware | 12 |
| 16 | Elvira | Accolade | 20 |
| 17 | Indianapolis 500 | Electronic Arts | 15 |
| 18 | Lotus Esprit Turbo Challenge | Gremlin | - |
| 19 | SWIV | Storm | new |
| 20 | Wizardry | Sir Tech | new |

The German games charts always throw up interesting arrays of games which have long been forgotten in the UK. SWIV, however, is just entering their charts and looks set to do well worldwide. Pirates! was released about a year ago and, although unsuccessful in the UK, was an instant hit abroad, reaching the top position in many countries and it is still doing well. But, as Psygnosis have shown, at the end of the day you can't beat a lemming.

Courtesy of Amiga Magazine (if you speak German, one certainly worth reading.)

the "Arriba" when they have left their Amigas turned on for more than just a few hours.

A few months ago the "Arriba" was priced at £430. This was too much for a 20 MByte hard disk, which Gigatron soon realized. Now the "Arriba" is available for £330. This is appropriate if you consider that you do not need additional space on your desk for this hard disk - a unique feature. Pay attention, however, to the fact that it is impossible to fit the "Arriba" together with internal turbo boards or internal RAM expansions that also use the processor port - there just is not enough space inside the Amiga 500.

The busy guys at Gigatron are currently working on an English language version of the "Arriba" manual.

You can contact them at:

Gigatron
Thueler Strasse 3
4594 Garrel
Germany
Tel: (0 10 49) 44 74 / 10 10

IrseeSoft - a heart for printers

"TURBOprint II" (see picture 4) and "TURBOprint professional" are two astonishing printer utilities that make it possible for sophisticated colour printers as well as for cheap 9-pin printers to produce print-

outs of a quality which comes very close the brilliant pictures you admire on the Amiga monitor.

"TURBOprint professional" has all the functions of "TURBOprint II". In addition to this, it offers fourteen instead of six grey patterns, an improved anti-aliasing function, and a half line mode that reduces the disturbing horizontal stripes on the print-outs of 9-pin-printers.

Print-outs may be mirrored and the poster mode makes it possible to create pictures which consist of up to 64 normal sheets of paper. The program also allows you to separate the colours black, yellow, magenta, and cyan for offset printing.

But perhaps the greatest improvement for owners of colour printers is the possibility of adjusting the colours of the print-out so that they really match the colours you see on your monitor. "TURBOprint professional" costs £63.

English language versions of the manuals should be available by the time this article goes to print. You can contact IrseeSoft at:

IrseeSoft
Schlachtbühl 1
8951 Irsee
Germany
Tel: (0 10 49) 83 41 / 7 43 27

CANON'S ION PC KIT

Canon, manufacturers of the ION Still Video Camera (reviewed *AUI* July) have launched a special kit to link the still video camera to PCs.

The contents of the kit are: Ion RC-260 video camera, ION-PC digitiser (the digitiser is only available as part of the ION-PC kit), software (3.5" and 5.25"), an interface cable for control link to the ION camera, cabling and connectors, ION camera battery charger and battery pack and a user manual.

When operating the Kit, the user connects the ION camera to the PC with the interface cable. The system enables users to 'preview' images stored on the ION cam-

era's 50-shot floppy disk and make a selection for capture to the PC, via the digitiser, with a software interface that, say Canon, "works in an intuitive and convenient way". The captured digital image is then stored on the hard disk for use in applications.

The digitiser takes seconds to capture an 8-bit image, using a sequential capture technique which digitises either full frame or field resolution as appropriate.

Images can be in 24-bit (16 million) colour or 8-bit monochrome and the software includes facilities for reducing the bit depth to 16-bit, 8-bit and 4-bit resolution using optimised palettes.



Canon's Still Video - now for the PC

APPLE APPEAL

A court ruling in San Francisco found two senior officers of Apple Computers guilty of making false statements, when claiming in 1982 that the 'Twiggy' drive for the Apple Lisa had both higher capacity and data integrity.

Internal documents from Apple however showed that they knew that the drives had serious problems from the time they were announced to the time when the drives were scrapped. One memo recommended they should not be launched because most were likely to fail within the warranty period. Apple went ahead with the drives but finally replaced them with a

Sony drive in September 1983. This led to an \$8 drop in the share price, triggering a lawsuit by shareholders.

This is not the first time Apple have been accused of misleading investors on the Lisa, but at a previous hearing in 1989, Apple won the case because, while conceding that it knew the drives had problems when they announced them, it knew it could correct them.

Apple are appealing against the present ruling, but if unsuccessful this time the practice of pre-announcing and talking up products may end. Goodbye vapourware at last? We'll believe that when we see it.

Colour Copying, Scanning, and Printing

Canon have launched a new state-of-the-Art Colour Laser Copier, the CLC 300. They have also launched a new Postscript interface which allows the CLC 300 to output four colour Postscript files.

The CLC 300, Canon say places them at the leading edge of colour laser copying technology. The CLC 300, which has a zoom capability of 50% to 400%, outputs full colour copies at a rate of five A4 sheets per minute. Although the output is limited to A4 paper, the copier will output larger images in page-parts. The CLC 300 features a front panel which permits colour mixing to enhance and recolour the original copy.

An interface is available for £725 to link the CLC 300 to a microcomputer, such as an Amiga, Apple Mac, or PC. The CLC can also scan and digitise images using the enhanced interface unit.

Desk Top Publishers can, for a meagre £9,750, connect their

computer to the CLC 300 via a Postscript interface driver which will output their DTP files in full colour.

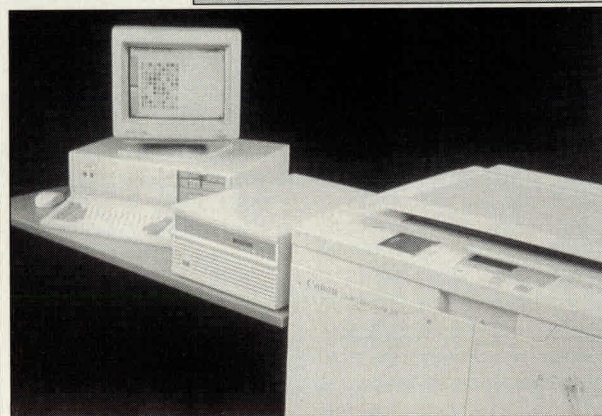
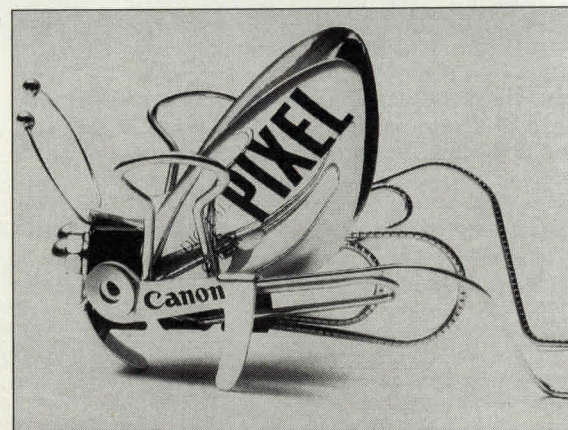
A complete system also provides colour printing from almost any photographic or digital/analogous source including colour transparencies, photographic negatives, video, TV, computer, and the Canon Ion Still Video Camera.

All that is required now is for ASDG to supply software loader/saver drivers for their excellent Art Department Professional to allow for input and output of colour images.

The CLC 300 retails at £12,000 (£18,000 with the Postscript interface unit), and is, say Canon, half the price of its elder the CLC 500. While it may seem expensive and out of reach for most users, those involved with the print industry will see it for what it is - a highly effective solution to entry level computer graphics and colour production.

Contact: Canon UK Ltd.
Tel: 081-773-3173

This colour photocopy was produced in about one minute and features no colour correction.



The CLC 300, the PS-IPU Postscript interface unit, and a PC.

DESIGNWORKS. THE PERFECT CREATIVE TOOL FOR THE AMIGA MIND.

Unleash The Artist Within No Natural Talent Required

Put DesignWorks To Work For You

If you've been looking for a fast, easy-to-use, high quality structured drawing program, look no further. Now you can unleash the artist within with DesignWorks, the structured drawing program designed for the Amiga mind.

Creativity In The Fast Lane

DesignWorks is built for speed. No longer are slow and cumbersome programs needed to achieve professional results. DesignWorks is the ultimate in simplicity, with a responsive interface and design set.

The Highest Form Of Self-Expression Is Now The Least Expensive

DesignWorks costs far less than you would expect from a structured drawing program with this much speed and flexibility. With a Bezier smoothing algorithm, unlimited numbers of drawing layers, flexible text handling system and user-definable multi-color patterns, you don't need to be a professional engineer or CAD programmer to achieve quality results. And high resolution printing means you get near-PostScript quality output from your dot matrix printer.

Stop by your local Amiga dealer to see DesignWorks in action.

DRAW YOUR OWN CONCLUSIONS

- Fast and intuitive structured drawing
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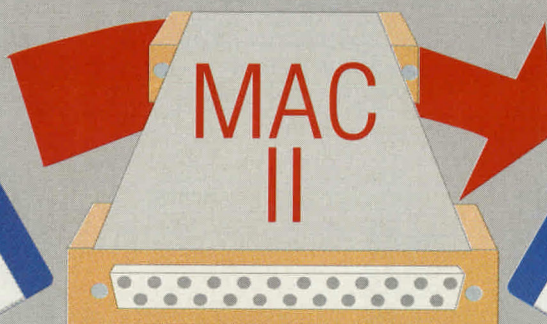
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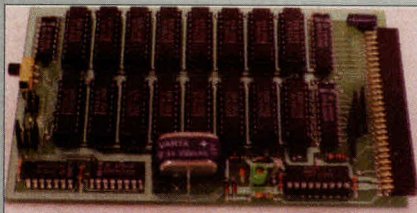
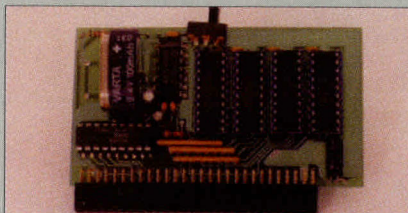
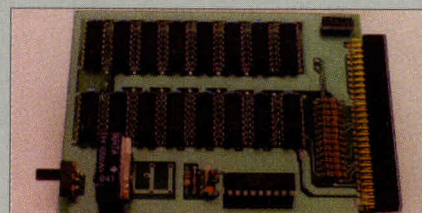
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For the first time ever the Amiga sequencer world gets something that is likely to make Atari ST users envious, says Paul Overaa. It is called Bars & Pipes Professional and it comes from Blue Ribbon Soundworks.

Bars and Pipes Professional



The Bars & Pipes Tracks window

Bars & Pipes Professional has been a long time coming but it has been worth the wait. For the last few weeks I have used it in a studio environment and, after doing a lot of MIDI recording work with it, there is no doubt at all that this package is destined for greatness. The reason is this - Bars & Pipes professional is more than just a sequencer - it is a creative music tool which actually encourages you to experiment with your music.

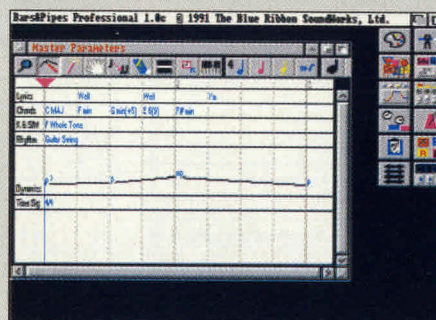
Bars & Pipes is very different to sequencers such as Dr T's KCS, Steinberg's Pro 24 Amiga, MicroIllusion's Music X and Gajit's Sequencer One. If you've not seen or read about the original Bars & Pipes package (which was released some two years ago) then a few

words about the general B&P sequencing arrangements are in order.

The centre of the main display contains a track list. Each track sits graphically in the middle of a 'PipeLine' which starts at the left hand side of the screen and finishes on the right. When the program first loads, each track has MIDI connector icons situated at each end of each track's pipeline and these represent the fact that MIDI input and output facilities are available. There is no limit, other than the amount of memory available, to the number of tracks which you can create. Conceptually your MIDI data flows in at the left hand side of the pipeline, through the sequencer, and then leaves via the right-hand-side output side.

Now for the clever 'object orientated'

TEST DRIVE



Master Parameters window allows useful global definitions



More notation editing

stuff... the pipeline concept works in conjunction with something called the ToolBox. To the user the Toolbox is a window which contains icons that can be dragged into and out of the pipeline. Tools on the left hand side, i.e. the input side of a track's pipeline, change the MIDI data before it enters the sequencer. If, for instance, you drag the harmony icon to the left hand side of track 5's pipeline then your track 5 MIDI data will be harmonized before being stored in the sequencer. Similarly, placing a quantizing module on the left hand side of a track will result in pre-quantized track data being stored.

So what about the right-hand-side of the pipeline? Toolbox icons placed in this area affect the sequencer output after it has left the sequencer. In other words, they affect the final output MIDI data stream but do not affect the stored sequence data. If, for instance, you had recorded a track using a particular right-hand-side event filter tool and decided that you didn't like the final result - you'd just remove the event filter tool from that track and the original track contents become available again.

In effect each left-hand-side tool does something to the MIDI data and then passes the resulting modified data on to any other tools which might be present on that track. The data is then stored, and as it is transmitted any tools on the right-hand-side similarly affect the MIDI output stream. How many tools can you place in the pipeline? The short answer is as many as you want! When a toolbox icon is dragged into the pipeline what actually happens is that the track gets its own copy of the tool in question. If,

"How many tools can you place in the pipeline? The short answer is as many as you want!"

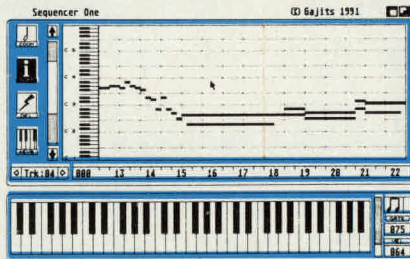
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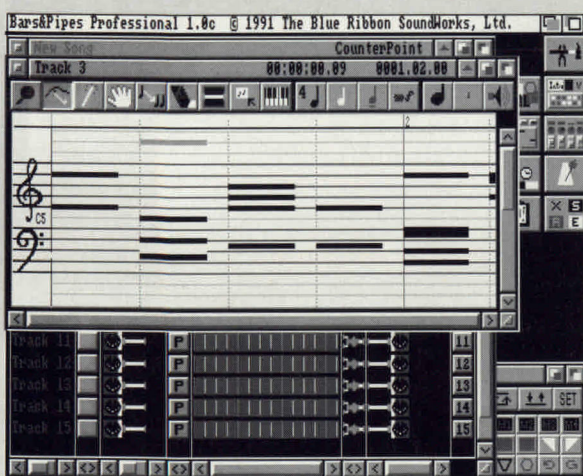
Bars and Pipes Professional

C O N T I N U E D

like the echo facilities, the tool can be edited then clicking on the icon provides an edit box which lets you change that track's version of the tool. The end result is that each and every track can have its own version of any Toolbox module.

Just the Beginning

What is likely to surprise you is that all of its facilities are really only the beginning of the Bars & Pipes Professional story. Every tool, for instance, can be made to work on whole songs/tracks or defined sections. Tracks can be set to record either all channels or selective channels... and you have individual rechannelling options on both input and



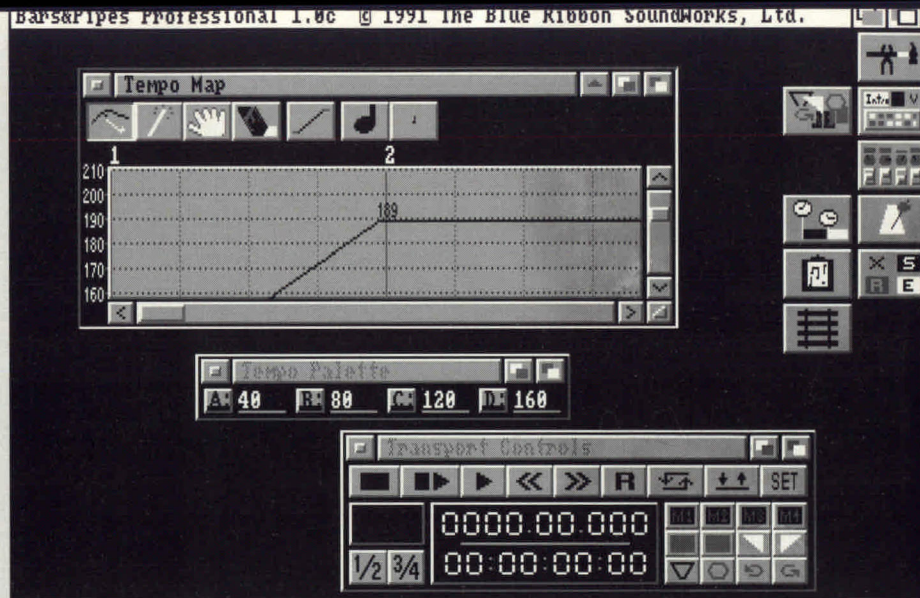
Bar editing in the B&P environment is straightforward

output sides of the pipeline area.

Across the top of the track display are now twelve icons, 'flags', which are used to set editing, recording and looping limits. They include a position marker which moves through the tracks area as you play and record, edit flags, four auto-locate registers, punch-in and punch-out flags together with loop and stop flags.

All of these settings work in conjunction with the Bars & Pipes tape transport controls which provide somewhat more conventional sequencer facilities. The transport window contains four groups of gadgets: Firstly, there's the transport controls themselves (start, stop, play, rewind, fast forward, record and loop). Secondly, there are a set of tempo controls which as well as providing the

"Bars & Pipes Professional contains so many options that there is just isn't the space to mention them all"



Grey scale windows will let you conserve valuable memory

obvious facility of letting you set the tempo in BPM (Beats Per Minute), also lets you use preset values for speed and offers 1/2 or 3/4 time modes (useful for recording difficult fast passages).

Bars & Pipes Professional contains so many options that there is just isn't the space to mention them all. Here is just a small selection... a large number of global song parameters can be defined and edited from a special Song Parameter window. There are options for physical track rearrangement, eight chance auto-loop recording, remote control facilities that allow the sequencer to be controlled using specific MIDI note events. Another useful extra are the 'group' controls - up to eight sets of tracks which comprise your song can be organized into 'groups' which can then be edited, muted and generally manipulated as whole units.

For creative recording there is not another Amiga sequencer that can touch Bars & Pipes. Having recorded a piece of music however one of the things that must also come high on the priority list in any sequencer environment is access to decent, easy to use, editing facilities. Here is how Bars & Pipes Professional scored in that department...

Multi-Track Editing Facilities

Before you edit, you must first choose a section, select the tracks and then determine the destination of the edited data. All operations use 'Clips' which store and retrieve edited information and these can be used in two ways: There is an internal clip buffer that stores a single clip. Cut and copy commands replace existing contents of this buffer with new data which can then be pasted to and mixed with existing tracks as required. There is also a multiple clip 'Clipboard' available which allows you to work with any number of clips.

All the usual editing commands are provided and, in most cases, these can be applied to all tracks, a selected track, or a group of tracks.

Staff notation: When you select staff notation editing (from the Bars & Pipes 'show' menu) track notes are displayed in traditional treble and bass clef, musical notation, form. B&P Pro marks accidentals, those notes which fall out-

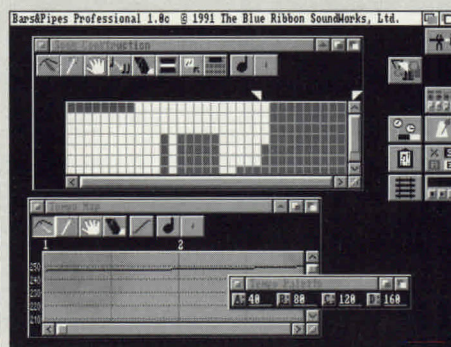
side of the selected key, with sharps and flats. Scrollable edit displays for all types of MIDI events are provided and there is also an event list editor which allows detailed editing of the low-level real MIDI message data stored in the tracks. System exclusive recording and editing is another feature provided in the professional version.

The display sizing options and command icons make editing very easy and you can, of course, use tools from the toolbox to modify notes or whole tracks. When detailed MIDI numerical data is needed you just click on the event and a window appears giving the full MIDI data. Icon based edit facilities are also supplemented by direct input of notes from a MIDI keyboard.

The new graphical song construction window makes it easy to build up multi-track, multi-sequence songs and there are some very powerful song parameter options which let you define lyric lines, chords keys/scales, rhythm data, global dynamics and time signatures. There is also a 'Mix Maestro' automated mixing console window which allows things like volume control, panning and track group locking (this lets you tie any number of tracks together so that mixer slider changes then affect all of those locked tracks). For the advanced user there is also a full range of SMPTE, MIDI Time Code, time-line video scoring and ARexx facilities available as part of the basic Bars & Pipes Professional package.

Accessories

Bars & Pipes provides a number of accessories which can be loaded into the Bars



New song construction window helps a lot

TEST DRIVE

TEST DRIVE

Bars and Pipes

Professional

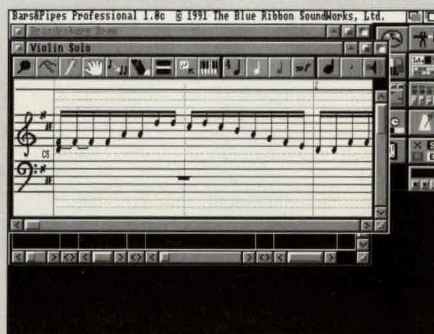
C O N T I N U E D

◀ & Pipes sequencer itself. One such accessory is Muffy which acts as a go-between between the Bars & Pipes internal format and the standard MIDI file format.

Conclusion

Bars and Pipes was good to start with. The professional version is simply stunning and its open-endedness is very attractive. A range of add-on B&P utilities has already been issued. Bars and Pipes Professional has been very well planned and, particularly as a compositional tool, it simply leaves all other Amiga sequencers way behind. It is now a big package and this inevitably means that the program takes quite a while to learn about. Facility-wise it borders on the size of MicroIllusion's Music X but since Bars & Pipes moves in a rather different sequencing direction there is little point in making direct comparisons. Bars & Pipes is extremely powerful and is in a class of its own. The only significant omission in my eyes is the lack of inbuilt, and easy-to-use, drum-map assignment facilities - it would be nice to be able to make (and globally change) drum note and protected drum channel assignments.

Bars & Pipes Professional needs 1 meg to run and this must be regarded as the absolute minimum for serious work. On the 1 meg A2000 machine used for the review, I had to use some of the Bars & Pipes memory saving options (switching out the undo buffers and often working



Notation editing - B&P does a difficult job reasonably well

in greyscale colours) to avoid low-memory messages whilst editing sequences.

The package, which comes on a single disk, has a well-written manual with lots of tutorial material included and with a program as sophisticated as Bars

"The professional version is simply stunning and its open-endedness is very attractive"

& Pipes Professional you need it. For facilities, Bars & Pipes Professional is pitched at the serious user and with an expected UK price tag of #255 plus VAT it is clearly not for the casual MIDI-ite who just wants to experiment with MIDI at home. The big question, especially with so many lower priced Amiga sequencers appearing must be... is Bars & Pipes Professional worth its price? The short answer, if you are looking for this sort of innovative power in an Amiga sequencer, is, undoubtedly, YES!

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ToolBox Tools

The Pipeline/Toolbox approach is fundamental to both the original Bars & Pipes package and the new Bars & Pipes Professional. It is an open-ended system which allows for new tools to be added at any time and this in fact is exactly what has happened with the professional version. The basic tools now include...

Accompany B: This is a tool which creates rhythmic accompaniment by matching the rhythm template and chords given in the song parameters. For every beat in the rhythm the Accompany B tool generates a chord that has the accent and duration of the beat, passing the notes it creates down the line to be processed by other tools etc.

Articulator: All notes passing through this module are converted to an specified duration.

Branch Out: This copies events and sends duplicates to other tracks.

The CounterPoint Tool: This creates a counter-melody for the notes passing through it.

Doctor of Velocity Tool: This tool will modify the velocity values of notes passing through it.

Echo: Here you can set delay, repeat and slope characteristics for MIDI echo generation. This is one of the tools which really drives home the creative benefits of the Bars & Pipes approach. As well as ordinary echo effects you can do some great things using 'in phase' echo timing (eg recording arpeggios or up and down 1/8th or 1/4 note scale riffs, pulling the echo tool into the RHS pipeline, and then adjusting the delayed notes until they sound as harmonies of the notes being played).

Elbow: Another Branching connector tool.

FeedBack In/Out: These tools feed events to other tracks.

Flip: This tool flips all notes around a centre note or axis. It measures the interval between each note and the axis and computes a mirror image. If you have set the key and scale song parameter values correctly this tool will be producing 'in-key' intervals.

Harmony Generator: User can add two harmony notes to each received MIDI note.

Inverter: Offers preset range-limited note inversion.

Keyboard Splitter: Allows you to split input events sending notes above the split point to one track, those below it to another.

Loop: This is a very sophisticated, but easy to use, tool. It records and plays a looped section of music. When recording it layers new notes on top of previously recorded notes offering riff and trigger modes and, if needed, automatic transposition of the looped section.

Merge In: This is used with other branch tools to connect tracks vertically.

Modulator: A frequency modulation tool which shifts notes up or down in pitch by a user-specified amount.

Note Filter: Only allows notes within a defined range to pass through.

Phrase Shaper: Uses a dynamics curve to modify velocity.

Plug: This is a tool which provides a musical 'black hole' - everything the Plug receives disappears, i.e. gets discarded. Believe it or not, it does have its uses (permanent muting of an unneeded track, blocking off unwanted branch tool connectors and so on).

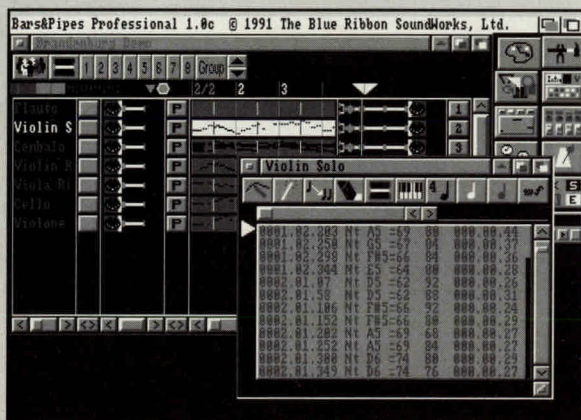
Quantize: This modifies the timing of notes to a user-defined resolution. Notes can be shifted to the closest note boundary which ranges from a 1/64th note to a whole note, with or without a triplet modifier. As well as being able to set the note resolution you can set a number of other parameters: A precision setting determines the effectiveness of the quantize tool (allowing you to leave some 'human timing' within the track). An offset control lets you push the quantize grid before or after the conventional beat grid. A lock zone setting enables you to determine the area around the beat grid within which the quantize tool will work. You can incidentally also specify individual quantization of both note-on and note-off events. This quantize arrangement stuff is powerful magic and, since you can have any number of these quantize tools operating on both the left and right hand sides of any or every track, this tool provides some of the most flexible quantizing facilities I have used to date on any sequencer!

Sforzando: This does strange things using polyphonic after-touch.

Triad: Used for chord creation.

Unquantize: This alters the timing of notes by a random amount and lets you re-humanize a track which has been over-quantized.


All of these and other tools are used by just picking up the appropriate ToolBox icon and moving it into the required track's pipeline area. Because Bars and Pipes Professional (like the original version) supports the use of multiple versions of these icon-driven tools the result of these facilities really do have to be heard to be believed! You can even create your own specialist macro-tool combinations using the Bars and Pipes 'Create a Tool' window.



stalled event lists let you see the raw MIDI data

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CONSTANT FACTORS

This month's quickies include three from Softlogik, a graph plotter and some pictures. Mike Nelson reports...

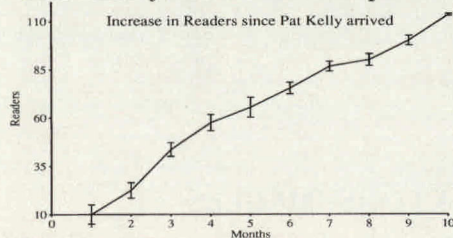
The Update Column

Amplot

One area of productivity software seriously lacking in the Amiga world is that of high quality graph plotting. Most of the decent spreadsheets will draw graphs on screen in umpteen colours, but when it comes to committing them to paper, screen dumps are simply not up to the quality required for publishing. There are maybe two solutions to this, and Amplot uses the obvious choice of generating PostScript files which are printed to the highest resolution of the output device, regardless of whether it is a 300 dpi laser printer or a 2750 dpi phototypesetter. The other choice would be to support structured drawing formats such as Professional Draw clips which provide similar quality to the laser, but without the exorbitant costs of PostScript.

Amplot is not initially a particularly friendly program to work with as you need to use a text editor to generate a data file for it. This in its simplest form is just the raw data which you want to plot, but Amplot has its own script language that allows you to specify completely the characteristics of your graph within this file. All the formatting commands supported as part of the program's menus are available from this language and once you get used to it (there are some examples on the disk, but a few more wouldn't go amiss), you will find it easy to copy a standard graph format for several sets of numbers. The screen update of your graph is fast and accurate, but the interlace mode used may annoy some users.

There are a number of graph options from which you can choose: simple X-Y



plots, scatter diagrams, bar and pie charts. The labelling the axes, lines and titling the graph. Amplot has a number of patterns built in and the requesters provide a flexible means of customising the final output. The last menu contains

options for smoothing out the data using powerful regression and Fourier algorithms.

Amplot is aimed at the scientific user publishing in journals and as such is not especially useful for business or presentation graphics; there is still a big hole there to be filled and with a little more work, Amplot could be easily expanded into this market. All it needs is 3D graphs for histograms and Pie charts with a more friendly user interface, and also support for either the new IFF DR2D structured drawing format or Professional Draw clips. It is also crying out for an ARexx interface so it could be controlled using scripts, but overall it does its job very well.

Amiga Clipart

There really isn't much to say about this one as it consists of thirteen volumes of IFF pictures with some 35-40 files per disk on a variety of different subjects from trees and

animals to planes, trains and people. Kuma have converted their successful series from the PC format onto the Amiga, recognising the lack of serious DTP clip art on this computer. The pictures are usually quite large, but when scaled down using PageStream or Professional Page, the jaggies normally associated with bitmap drawings disappear and the results are impressive.

All the artwork has been imported from the USA but Kuma are set to release another 1000 or so drawings from British artists.

Each volume costs £19.95 and a demonstration disk with full catalogue is available for a miserly £3.50, so if you have any interest in DTP on the Amiga, check them out.

PageStream Fonts and Forms.

The PageStream DTP program comes with only three of the standard PostScript

fonts, Times, Garamond and Triumvirate along with Compugraphic outline versions of these for dot matrix printers. Soft-Logik also supply 8 of their own outline fonts. There are a number of ways of adding to this and the most obvious for PostScript users is the Disk A Pack, priced \$39.95. This contains screen fonts for the usual Palatino, Avant Garde, Dingbats etc, and really should be provided as standard as with Professional Page. Users requiring these fonts who don't have access to a PostScript device should look at the Plus Pack at \$75. Representing excellent value for money, this gives you outline fonts for all the PostScript character sets so you can get full benefit from your printer, be it a laser, inkjet or dot matrix. Lastly in the font department is Font Pack 1, again costing \$75 and provides a further 14 Soft-Logik fonts which are slightly more erudite in design.

PageStream Forms

This is a package of pre-defined forms which may be useful to any business. There is a whole stack of invoices, shipping orders, office memos, quotations and accounts literature. These are easy enough to modify to suit your own needs and there is no shortage of variation with nine different invoice formats so you are bound to find one that does the job. The cost of all these is \$39.95 and although they are designed for American usage (Zip codes, states etc), changing to British postal conventions is no great problem.

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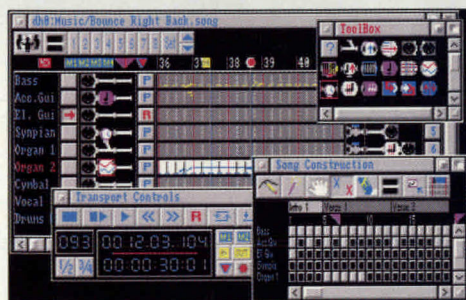
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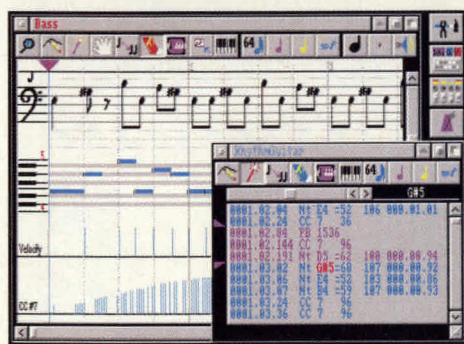
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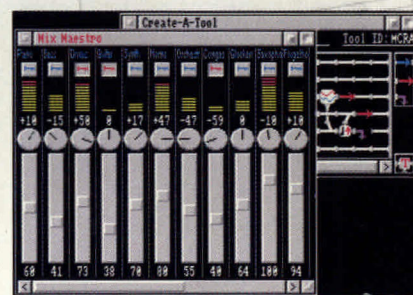
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TEST DRIVE

PROclips

John Walker finds a new clip art package an interesting addition to a neglected area...

Clip Art is a great asset for anyone involved in desktop publishing. It provides instant illustrations and an easy way of adding extra punch to a page or a poster.

So far, though, most Amiga Clip Art (and there isn't that much available) has consisted of bitmapped images, which don't always reproduce well on the printed page.

What the Amiga needs is more structured graphics, which do not have the limitations of bitmapped art. Because structured graphics exist as geometric descriptions rather than a collection of pixels, they can be re-sized without loss of quality and reproduced at the highest resolution of your printer.

That is where PROClips comes in. It is only the third collection of Amiga structured graphics to become generally available and it has the advantage of being the cheapest. It contains around 190 images in black and white and colour, plus numerals from 1-9 in an LED-like style.

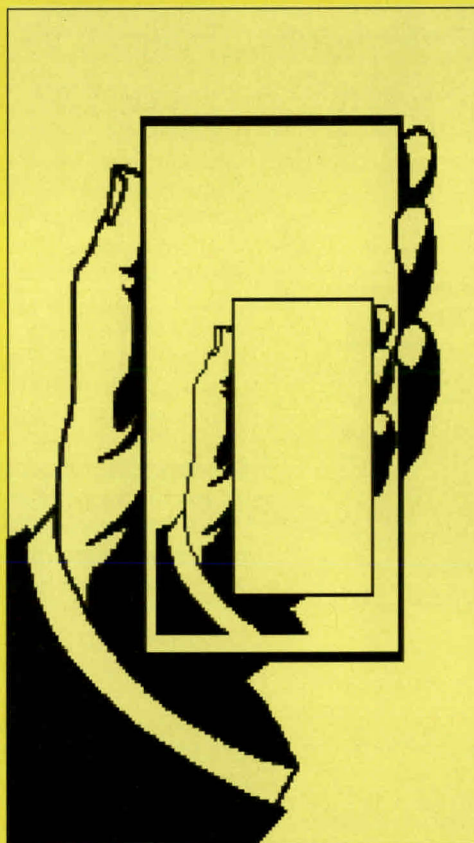
The drawings were created using Gold Disk's Professional Draw by a professional designer, Chris Barnardo, and are compatible with the three best Amiga DTP programs: SoftLogik's PageStream and Gold Disk's Professional Page and PageSetter II.

The clips are divided into eight approximate categories: Computers, HiFi and Slides; Borders, Pins, Letters; White and Brown Goods; Special Occasions; Arrows, Stars and Stamps; Money and Credit; Flags and Warnings; and Special Occasions.

White and Brown Goods seems aimed at people who produce small ads for newspapers, consisting simple outlines of such items as a refrigerator, a kettle, a food mixer, an iron, a washing machine, a cup, a knife and fork and so on.

Maps and Miscellaneous includes just two maps, both of Britain without Ireland, plus a cityscape, a globe, a cartoon moon, a kite, a bulldog's head, a match, and a couple of cityscapes.

Special Occasions, which might be considered to have the greatest appeal to the largest number of users, is the most limited: there is a bow, a candle, a small cake with and without a candle stuck in



"It is only the third collection of Amiga structured graphics to become generally available and it has the advantage of being the cheapest."

it, a sprig of holly, two bells, a gift-wrapped package and two baby's dummies.

Borders, Pins and Letters provides two border designs, two hands holding a blank card to which you can add text, some speech bubbles, and images of stamps, cartons, pens and paint-brushes.

Computers, HiFi and Slides has several graphics or computers and monitors, together with a record turntable, a stapler, a mobile phone, a push-button phone and some of photographic equipment.

Arrows, Stars, and Stamps has eleven variously designed arrows, together with some star bursts, a drum, the words NEW and FREE drawn in perspective and a rubber stamp with the messages A1, NO!, OK!, YES and PASS.

Flags and Warnings provides flags for 15 countries, including Britain, all showing the design on a shadowed rectangle, together with a selection of triangular warning signs for lasers, fire, poison and so on.

The **Money and Credit** category has the dollar, pound and yen signs drawn plain or on fancy backgrounds, together with some credit cards and some LED-style numbers.

If you already have Gold Disk's Structured Clip Art, you may find that there is an overlap between its images and those available on PROClips. Otherwise, though, Proclips is a welcome collection at an affordable price.

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Keep on Trackin'

Amongst the list of qualities used to describe the original equipment Amiga mouse, the word "robust" does not crop up many times. The all-to-common symptoms of a rodent not long for this world include a definite sluggishness around the buttons, followed by increasingly common slips on even the best-kept mouse mat. These symptoms are hard to cure, and more often than not, the sad demise of the poor rodent is soon in coming.

In my experience, there are two ways to treat the case of the dead rodent. The first - and highly illegal method - is to sneak into a High Street store and perform a covert swapping operation with a display model. This method has several pitfalls, not the least of which is the concept: that replacing a well-used Commodore mouse with another well-used Commodore mouse may actually leave you worse off than when you started.

The second method - and a much preferred one at that - is to buy a new mouse; one of the non-Commodore ilk. As can be seen from the extensive coverage in the May issue of *AUI*, there are many excellent replacements available, and most of them are very reasonably priced. (All much less than the average fine for shop-lifting, in any case.)

However, there is a third way of replacing your little friend, and one which seems to be overlooked by most Amiga users. I'm speaking of course, about balls. Trackballs to be precise.

When I express my preference for trackballs to my Amiga-community colleagues, most express little more than disgust. "How could you?" they say, as though I am indulging in some unusually perverse habit.

As far as I am concerned, this proves that they have minds so narrow that a pair of vernier calipers would be needed to measure them. Most of the people who accuse me of anti-social behavior have had very little experience of trackballs. Perhaps one or two have given a hapless trackball a rough spin and declared "Yuck, I could never use this."

It's their loss. I like my trackball for several reasons, and probably the most important reason is that the ball never slips. No matter how carefully you clean your mouse, some fluff will eventually find its way into the inner-workings, causing all sorts of jams and slips. As I find that the state of eye-to-hand-to-machine symbiosis which exists between me and my on-screen pointer is paramount, I detest even the possibility of a single slip. In other words, a juddery arrow gets on my wick.

Flying in the face of popular office opinion, John Kennedy declares that a trackball leaves mice standing. What are his reasons for this anti-social behaviour?



There can be no doubt that a trackball takes a bit of getting used to, but the rewards make it worthwhile.

The second reason for using a trackball in preference to a mouse is the incredibly small area needed to operate the former. On my desk, space is at a premium, with papers, books and disks all vying for attention. A trackball always takes up a constant and minimal amount of desk space.

The final reason is a personal one. For me anyway, a trackball is equally effective in both my left and right hands. Now, I'm not particularly ambidextrous, but after about a year of tracking I can sign my name quite respectably no matter which side of my keyboard is currently home to my input device. Try doing that with your left hand on a mouse.

There can be no doubt that a trackball takes a bit of getting used to, but the rewards make it worthwhile. I now cannot now use a mouse - no matter the make - comfortably. Give me a solid ball under the palm of my hand and I'm happy.

My current trackball is manufactured by Marconi, although it has been badged under several other names. It's easily distinguished by being a large wedge-shaped piece of beige plastic, having a full size palm-rest and three buttons above the ball, the centre button slightly larger than the others. The only fault of the Marconi is the shape and position of these buttons, as they are not the easiest to use. The Marconi trackball is also a little bit on the pricey side, costing around £49.99 from Trilogic. The price is reflected in the high quality of the thing, with what appears to be a black snooker ball at the heart of it. After over a year's use, it has needed only one major clean.

A new unit from the US of A and distributed by Evesham, is the Kraft trackball. This device is quite cunning in that simply by altering a switch at the side of the unit, it will

work with either the ST, Commodore 64 or the Amiga. However, since I am not in the habit of using an ST or C64, its other features interest me more. Features such as an autofire option. Not so useful on the Workbench perhaps, but jolly handy when it comes to SuperGridRunner. Also in the Kraft's favour is the 'drag' button, which has nothing to do with women's clothing, but rather locks down the left button and enables you to drag icons around with ease. This feature is made almost essential because the three selection buttons are actually placed underneath the ball. This positioning I cannot understand. Call me a genetic freak if you will, but I have my fingers at the end of my hands. In order to select the switches, I have to lift my hand away from the ball and reposition it. Crazy! I find it easiest to use with the unit sat on my lap, employing one hand to move the ball and one to press the buttons. Perhaps with time I will get used to it - after all it did take me about a month to complete the Mouse-to-Marconi phase.

It has to be taken into account that input devices are an exceedingly personal pastime. Other users may like the way the Kraft is designed, even though in my view it is awkward to use. Not as awkward as a mouse, but much more tiring than the Marconi.

After several weeks' use, I still prefer the Marconi trackball, but given the choice between the Kraft trackball and the best mouse available, the rodent loses everytime. It may require a bit of retraining on my part, but you simply can't beat a trackball.

Summary of office survey:

For trackballs: 1 vote (John Kennedy)

Against trackballs: 10 votes

(Following the Kennedy Democratic Principle, I suppose that the trackball is elected. Ed.)

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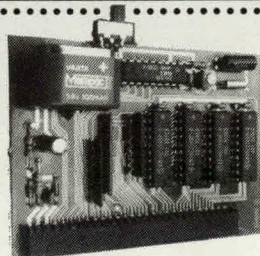
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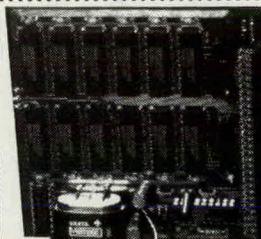
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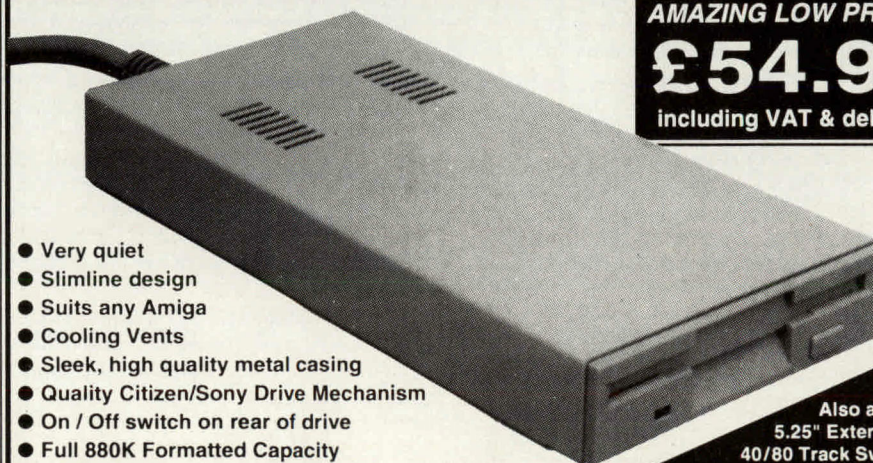
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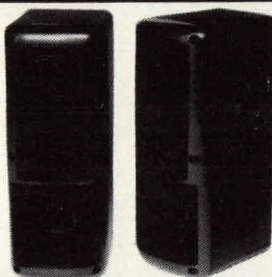


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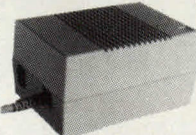
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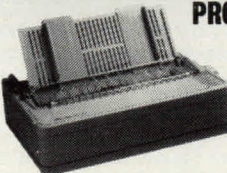
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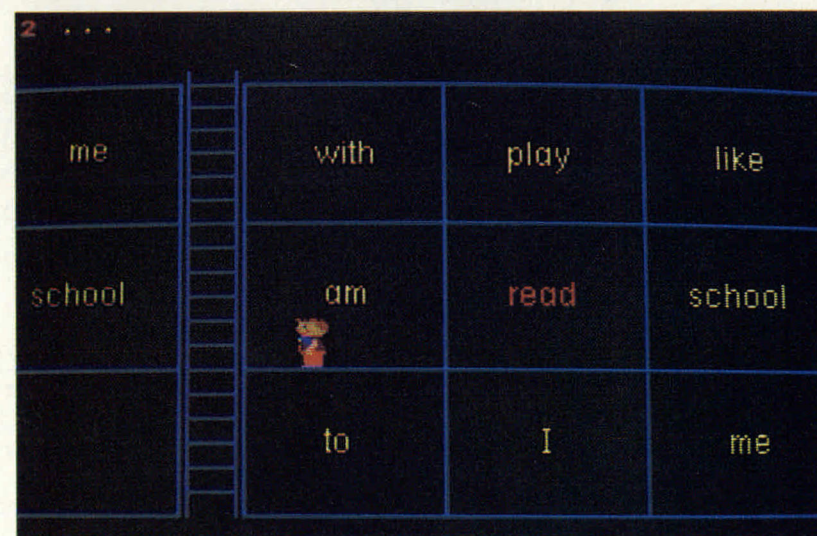
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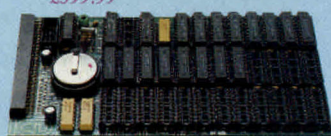
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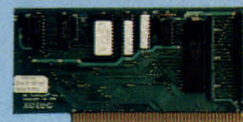
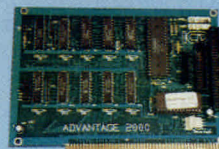
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Sampling Success Part 2

Last issue we went through the first stages producing a cut-up remix using the Amiga's sampling facilities; sampling the sounds themselves. As they say, it's not what you've got, it's what you do with it, so this month I'll pass on some tips to get you started. I assume you have a recent version of Teijo Kinnunen's Music Editor (MED for short), which is available for £3 from Amiganuts United (tel: 0703 785680). If you don't, Soundtracker or



If you're using more than one beat in the mix, you can smooth the transition as you move from one to another, with the use of a "hit" on the last beat of the bar before the change. Just about any sound will do the job, from a James Brown grunt to a sci-fi zap.

Noisetracker will do, but a copy of MED will make your sample-sequencing a lot easier.

If you followed the guidelines in *AUI* August, you should now have a collection of various samples, including breakbeats, vocals, hits, fill-ins and so on. By now you should already have decided on a main backing beat, or a collection of beats for the mix. First thing to do then, is put that down in the first track.

Laying the foundations

Load up your first beat, and put it down on the far left track, making sure the note you enter on the track matches the sample's correct playback frequency. If the sample has a loop defined on it, take it off so that it just plays once. The chances are the current tempo of the song won't match that of your beat. To try it out, click on "play block". Depending on the length of your beat sample, and the current tempo setting, it will come to an end somewhere around the 16/32/64 event mark on the block. Find which of the

"The chances are the current tempo of the song won't match that of your beat"

Tony Horgan continues sampling successfully . . .

three it ends nearest, and put down another copy of the sample on that beat. Play the block again, and listen carefully to hear if the second sample cuts in too soon, or if there's a gap between the two. If there's a gap, increase the tempo a little, and take it down if the second sound is coming in too quickly. If you're using a tempo of around 28-34 bpm, it's quite possible that none of the tempo settings is quite right. If so, expand the block, double the tempo, and then tweak it one bpm either way. This gives you a finer "resolution", and should remedy the problem. If there's still an audible jump, you can double the tempo and adjust it once again.

If you are having bad synchronisation problems, make sure you don't have any silence or unwanted sound at the start of your sample. Your beat will almost certainly start with a bass drum sound, so zoom in on the far left and check that the wave starts with a series of pronounced arches, which indicate a bass sound.

Extending your mileage

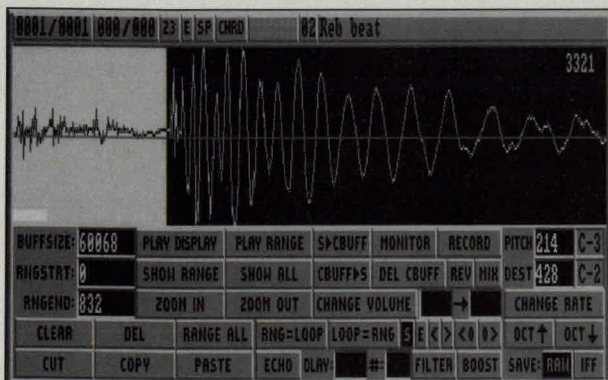
Now you've got the beat in place, you

might want to experiment with some variations. If your beat is solely percussion sounds, you may be able to cut it up, and put it back on the block in a different order. You can use this technique on beats that have vocals or melodies running over the top, but the cutting and pasting often sounds a lot more obvious. If you're not confident enough to chop up your sample, try some of these ideas for some interesting effects.

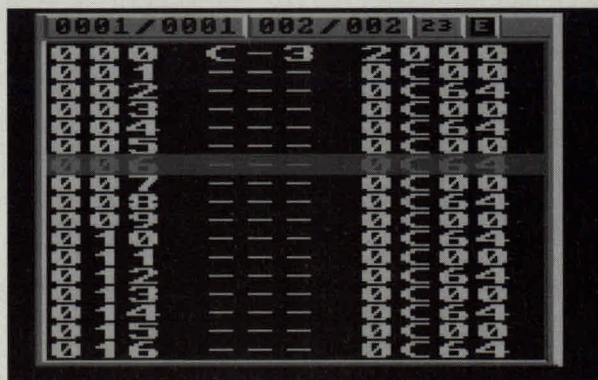
Put the main backing beat down on the first track as usual. Now move down the block to the spot where either the second or third beat of the bar comes in. Move across to the second track, and put down another copy of the backing beat. Move down another 16/32/64 positions, and drop another copy of the beat in the second track so that both tracks keep playing without a break.

To mix a mono beat into pseudo-stereo, use a fast tempo, something around 120 bpm or double that, and set the same sample playing on both tracks, but very slightly out of sync. Just one "event" or bpm should be enough.

Another trick is to set the backing



Make sure your backing track sample begins with the first beat of the bar. This one has a bit of hiss at the start (the highlighted section). Clipping it will get it to run exactly in time once you've sorted out the tempo.



Using the volume command, a long sample can be "strobed" in time with the beat. Alternating between maximum and minimum volume settings, you can get a unique and pretty funky effect.

"One option is to sample a hook from record, and just drop it into your mix. For an example of this, take MC Hammer's 'Yo!! Sweetness'"

sample playing twice, triggered at the same point, but with the second sample played one octave lower. Both will run in time with each other, with a fuller sound as a result.

Synchronised muting of a sample can be used to excellent effect. Use MED's "C" command to turn the backing on and off in time with the beat. The command leaves the sample playing, but can turn the volume right down, so if you alternate "C00" and "C64" commands at one, two, four or eight event intervals, you can rhythmically turn the backing on and off in perfect time with the beat. This effect works best with a backing that includes a vocal or rhythm overdub. I suppose it's the aural equivalent of a strobe light.

Experiment

So you've got a beat sorted, maybe with a few variations and fills. Now is a good time to go through your samples, trying out any ideas that you might have. Set the beat running, and put the program into edit mode. Tinker around with your samples, and if you come up with any patterns you like, they'll be recorded automatically. Anything you record that you don't want to use can easily be deleted.

Vocal variety

Although you may not realise it, the old "N-N-N-Nineteen" effect is still alive and kicking in today's chart, even if it's been developed very slightly since Paul Hardcastle's ground-breaking number one smash. Listen carefully and you'll find the hooks from loads of dance records are based around three, four or five words, repeated at various points, not always looping back to the start, but usually with the sampler spitting out the whole phrase at the end. Cutting your vocals into words or syllables, and triggering them in different orders can produce some interesting results. Incredibly tacky as it was, the recent single "I Can't Take The Power" used this method with great (commercial) success, blatantly splicing together two very short vocals to make a hook.

Alternative effects

If you want a more original vocal effect, you could mess about with the sound in MED's sample editor. Echoes are easily added, but a more unusual effect can be gained by adding an echo at the start of the sound, as heard at the start of Depeche Mode's Personal Jesus for example. Here's how it's done.

Copy your sample into a slot that's about twice the size of your original vocal, so you have some room for the echo. Now highlight the entire sample, and click on "reverse". Next, drag the highlight over the right hand end of the sample and echo it with your chosen parameters. Then highlight the whole waveform, and reverse it again. Play the sound and you'll find you've got a weird echo that leads into the first syllable of the vocal.

For a really freaky effect that works best on spoken words, copy and reverse random sections of the vocal, then use the "mix" function to blur them back into the original sound. The more you copy, reverse and mix, the stranger the sound gets, until it's completely unintelligible. If you then want to loop the whole thing, copy the entire sample in one go, reverse it and mix it back. It should then loop without much of a jump.

Simply reversing a whole phrase can lead to surprisingly good results, but of course you can no longer make out what is being said or sung. However, there is a way you can reverse the whole phrase, reap the benefits of a weird effect, and still keep it intelligible. Look for peaks and troughs in the sample; these represent the syllables. Highlight each in turn, and perform a reverse function separately on every syllable.

Scratching

Pseudo-scratching isn't that difficult to achieve, and takes up very little memory. First you need to get hold of a scratch sound. Either take one from a sample library, or just record one yourself straight from a turntable. A single scratch stab is all you need. Select the sample that you want to be scratched, and set the block playing. Now trigger the sample a few times at the spots that you want the scratches to occur, playing it back at slightly different frequencies. Then, stop the block and select the sampled scratch. In step-time, replace most of the data you've just recorded with your scratch

"Another trick is to set the backing sample playing twice, triggered at the same point, but with the second sample played one octave lower"

sample, entering it at various pitches to give a realistic sounding effect. Remember to leave a few remnants of the original data between the scratches, and finish the sequence off with the whole of the scratched sample.

You can use this same scratch sample to scratch any other sounds, and all it costs is a few K of memory

Hummability

A tuneless mix isn't going to be very catchy, but writing a catchy tune can be the most difficult part of all. One option is to sample a hook from record, and just drop it into your mix. For an example of this, take MC Hammer's "Yo!! Sweetness", which is little more than a slice of Cameo's "Word Up" with a rap and breakbeat over the top. However, there are a few simple ways that you can make your sampled hook sound quite different.

Chords and basslines can change the mood of a melody a great deal. As well as laying a new chord sequence or bassline over the hook, you could try dropping it in at a different part of the bar. This can have the effect of emphasising different parts, and you can end up with something sounding pretty funky, but not as blatant as a straight steal.

One other idea is to string together a set of samples that have been discretely doing the rounds as low-key drop-ins or intros, a method used in Salt 'n' Pepa's "Don't You Want Me?". Of course, there's no reason why you shouldn't actually compose a hook of your own, you know, like they did in the old days.

First things last

Once you've got your mix chugging away and you're happy with it, you can start thinking about an intro. This can be the most enjoyable part of putting the mix together. Mess around with your samples and put down a few semi-random sequences. Once you've come up with a punchy, attention-grabbing little bar or two, stick it at the front of the mix and bob's your uncle.

Now all you have to do is put your tape or disk around a few PD libraries, DJs and record companies, and wait for fame and fortune to beat a path to your door. Well, that's the theory at least...



If you want to give your mix a certain theme or atmosphere, try including a few sound effects. A few tweeting birds and chirping crickets maybe, gunshots and explosions, car horns, voices or whatever seems appropriate.

"Tinker around with your samples, and if you come up with any patterns you like, they'll be recorded automatically"



Cheering audiences sample and loop well. Give you mixes a live sound by fading in and slightly pitch-bending a crowd loop at certain points.

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Games News

Manchester United Europe

Krisalis

...so I says to her, I says Mabel, you wait three years for football game on the Amiga, then fifteen of them come along at once. Then you have to wait another year for the next one etc...

The boys did us proud in Europe, reminding us all that it's the winning, not the taking part that counts. You too can give all those dirty continental teams a thorough whooping, and take in some of the best acting talent outside of the Cannes film festival.

Rather than an overhead view, Man United Europe uses the side-on style. All of the players wear numbered shirts, and a simple text commentary lets you know who's on the ball. All of the United players are included, and play in the proper positions with their corresponding numbers. There's a big overscanned screen, smaller sprites than before, and more available moves. It looks like it could be a bit of a belter, so keep it here for the review in the near future.



◀ Manchester United Europe

Turtles (although there's also going to be an attempted Turtles revival for Christmas). Cowabunga is history. Now you've got end every sentence with "man" or "dude" if you want to be considered a smoothy among the under tens. Expect a re-run of the Turtles to the letter, as is already happening. If you buy anything with a Simpsons sticker on it, look underneath it and you'll probably find a turtle, and probably a Ghostbusters logo under that!

On the upside, Commodore will be bundling the game with the Amiga, incidentally in a 1 meg version, which can only be good for sales. Not only that, but prospects for the game itself look

brighter than they did for the Turtles game, as Ocean haven't come up with a real turkey for years now. Batman, their last mega-biggie, was pretty good on the Amiga, so Bart's game could turn out to be okay after all.

The Simpsons

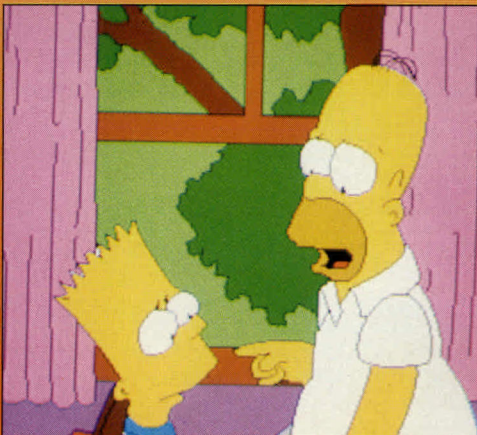
Ocean

Yep, Ocean have got the Simpsons licence. Like it or not, The Simpsons are this year's

▼ The Simpsons.



▼ The Simpsons.



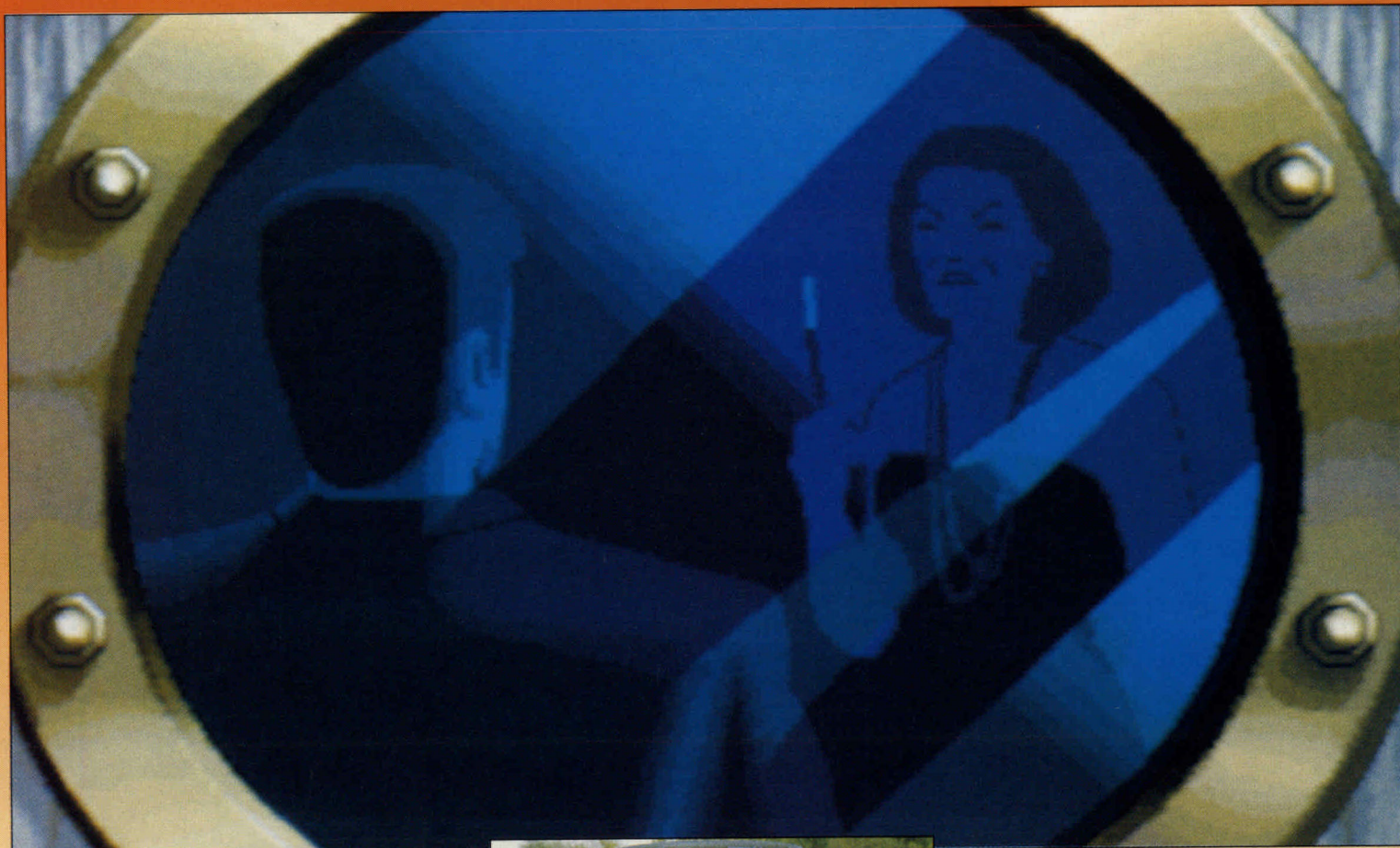
Cruise For a Corpse

Delphine

Isn't it funny how all these brilliant detectives manage to stumble into a murder mystery every week? It's just The Famous Five for grown-ups if you ask me. Don't get me wrong,

▼ Cruise for a Corpse





▲ *Cruise for a Corpse*

now and then, a bit of murder mystery can be quite fun, but we don't really need it on the telly every Saturday evening do we?

If you answered "yes" to that question, you'll be pleased to hear about Delphine's new adventure. *Cruise For a Corpse* is just such a tale, along the lines of *Death on the Nile*. In this case it's the Mediterranean instead of the Nile, and you play Inspector Raoul Dussentier. Delphine tell us that the characters have been doubled in size, and their updated adventure system now lets you talk to the people you meet. From the authors of *Future Wars* and *Operation Stealth*, *Cruise For a Corpse* may well be just the ticket for budding Sherlocks.

Lotus Turbo Challenge II

Gremlin

Have you seen the new style Lotus Elan? Gremlin have, and they've fallen in love with it. They're so head-over-heels with it, that they've decided to write a game around it, as a sequel to their Lotus Esprit game of last year. I was drooling over one just this morning in fact, and a very tasty motor it is too.

Loads of improvements are in the pipeline according to Gremlin. There's the option to link up to four machines together, different weather



▲ *Lotus Turbo Challenge II*

conditions, bridges, level crossings, forks in the road, and Italian Job-style winding cliffside roads. Just the thing for AUI's insatiable appetite for racing games.

Monkey Island II

Lucasfilm/US Gold

Oh joy! I can now relax in the knowledge that there'll be another *Monkey Island* game on the way once I've finished the first (reader's voice: "Blimey, haven't you finished it yet? I completed it ages ago, and I thought you lot were meant to be experts..."). It's not all beer and skittles up at the AUI offices you know.

They just don't know when to stop, this Lucasfilm lot. Starting out as comically bad in *Maniac Mansion*, their adventure graphics have now escalated to superb. *Monkey Island II*

looks even more luscious than the first game, if that's possible. There are going to be a number of skill levels, but the problems won't just be more difficult on the higher levels, they'll be completely different! I can feel another AUI Classic coming on...

Chuck Yeager's Combat School

Electronic Arts

You read the review of Chuck's *Flight Trainer* in the June AUI didn't you? Of course you did, and you remember that there was nothing much in the way of gameplay. Chuck's *Combat School* could set the record straight. You'll get the wide variety of planes seen in the first game, but this time you should actually be able to do something with them.

There are all sorts of missions, set in three different war and time zones. You won't be limited to fighting for the "goodies" either. Just for laughs, you can jump in a Messerschmidt and pit your skills against the best of Blighty's Spitfires ("accidentally" getting shot down of course). There'll also be a "custom mission" feature, to allow you to devise your own missions.

Tony Horgan

Games News

C&N Computers Amiga Public Domain

354 High street. Chatham. Kent. ME4 4NP Orderline 0634-831870

Music section

C006 Sonix No.1
C030 Share & enjoy equalizer
C029 Sonix No.7
C043 Alf demo 1
C061 Classix 1
C066 Royal Amiga Force 1
C067 Disk B to above
C087 Kylie Its no secret
C088 Disk B to above
C093 Bacteria demo
C101 Sonix classix
C108 Digital concert 3
C113 Sonix No.17
C130 Budbrain demo 1
C131 Disk B to above (18)
C142 Digital concert 1
C143 Digital concert 5
C156 Donald weres yor trousers
C163 Genesis Land of confusion
C189 Treac mega demo Disk A
C190 Disk B to above
C191 Disk C to above
C192 Alkatraz demo disk A
C193 Disk B to above
C194 Disk C to above
C198 Star trekking disk A 1 meg
C199 Disk B to above
C200 Xmas carols
C201 Good morning vietnam
C210 Alf demo 2
C229 Hot wired
C236 Turtle demo by sector 16
C244 Amazing tunes disk A
C245 Disk B to above
C246 Disk C to above
C248 Budbrain 2
C303 Startracker V1.2
C305 Sonix No.5
C308 Zenn sound box
C324 Noisetracker
C327 Turtle power disk A
C328 Disk B to above
C329 Disk C to above
C356 Beatmaster 808 state
C367 Ultimate FX
C380 Mucky morris & the cowpats
C410 Digital concert 2
C411 Digital concert 3
C412 Digital concert 6
C416 Blues brothers disk A
C417 Disk B to above
C418 Disk C to above
C419 Dr awesome & Fleshbrain
C425 Arni sampled off radio Disk A
C426 Disk B to above
C428 Smith & Jones 1 (18)
C429 Smith & Jones 2 (18)
C430 Smith & Jones 3 (18)

All public domain disks are virus checked with the latest version of the Master virus killer. Anyone finding a virus on one of our disk please let us know and it will be removed from the disk.

Amiga Public Domain prices

Prices vary on how many disks are needed to make a program work. ie some music disks need 2 or more disks to work these are called sets.

Single disks £1.50p each
Two disk sets £2.75p per 2 disk set
Three disk sets £4.00p per 3 disk set
Four disk sets £5.25p per 4 disk set

Min order 5 disks

More disks are in the collection to many
Disks to list here. Last count over 900

Utility section.

E001 SED
E017 Printer utilities 1
E020 Fonts disk 1
E021 Fonts disk 2
E022 Label designer
E028 Ultimate utilities
E029 Virus killers disk 1
E032 Boot block makers disk 1
E032 Printer utilities 2
E045 Bussiness card maker
E046 Viruscope (good)
E051 Ncom V1.9 (modem util)
E056 Tetracopy
E057 Catalogue workshop
E063 C manuel
E070 QL emulator
E071 Disk B to above
E072 Disk C to above
E074 Spread sheet
E083 Master virus killer
E088 Textpluss word processor
E094 Flexi wosname data base
E105 North C
E114 Slideshow construction set
E119 Dope intro maker
E130 Rim data base
E140 A gene geneology program
E141 Forms really unlimited
E153 Disk crunchers

Games.

D004 Monopoly USA version
D008 Paranoid (Breakout game)
D013 Peters quest
D020 Poker solitaire
D026 Blackjack/solatre
D027 Star trek disk A
D028 Disk B to above
D035 Break out games
D044 Flashbier
D052 The drip
D054 Breakout construction set
D057 Letrix
D065 Wet beaver tennis game
D069 Tiles/battleships/chess/tetrisII
D070 Tomtespetel (2 player)
D071 Return to earth
D072 Star trek the next generation
D074 UGA games compilation
D075 Snake pit game

Graphics section.

F011 Space ace demo
F015 3D arm
F025 Pugs in space
F030 Gymnast anim 1 meg
F049 Fractual flight demo
F057 Viz pics (18)
F058 Fantasy pictures Disk A
F059 Disk B to above
F086 Enterprise leaves the
Dock anim 1 meg
F091 Stealthy manouvers
1 meg
F097 Argatron anims 07
F098 Argatron anims 24
F100 Argatron anims 02
F101 Argatron anims 22
F102 Argatron anims 23
F104 Argatron anims 17
F109 Clip art disk 1
F110 Clip art disk 2
F111 Clip art disk 3
F112 Clip art disk 4
F113 Walker demo 1 2meg
F114 Disk B to above
F115 Walker demo 2 2meg
F116 Disk B to above
F125 Station anim 2 meg
F126 Disk B to above
F127 Disk C to above
F141 Fillet the fish 1meg
F164 Tobias richter slideshow
F165 Disk B to above
F166 Lost in space anim 2meg
F167 Disk B to above
F168 Disk C to above
F170 Batman the movie 1meg
F173 Juggler meets the lady
F174 Fantasy space slideshow
F176 Mandlebrot generator
F179 Iraq demo 1meg
F180 Amy the squirrel at the
Movies 2meg
F190 Tron anim 1 meg
F191 Disk B to above
F200 Robin hood slideshow
with music (Cartoon)
F209 Life of brian slideshow
with samples from film
F219 Franklin the fly anim
F228 Italian Job digi anim 1
1 meg
F229 Italian job digi anim 2
1 meg
F242 Stealthy manouvers
Swiss army F16 anim

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AMIGA USER INTERNATIONAL TOP 10 GAMES

| Position | Game | Company | Last Month | Rating | Price |
|----------|-------------------------|-----------------|------------|--------|--------|
| 1. = | PGA Tour Golf | Electronic Arts | (1) | 94% | £25.99 |
| 2. ▲ | Secret of Monkey Island | US Gold | (5) | 93% | £25.95 |
| 3. = | Gods | Renegade | (3) | 79% | £25.99 |
| 4. ▲ | Eye Of The Beholder | US Gold | (8) | 97% | £39.99 |
| 5. NE | F15 Strike Eagle | Microprose | (-) | 80% | £25.99 |
| 6. ▼ | SWIV | Storm | (2) | 81% | £24.95 |
| 7. ▼ | Lemmings | Psygnosis | (4) | 100% | £39.99 |
| 8. ▼ | Speedball 2 | ImageWorks | (6) | 91% | £24.95 |
| 9. NE | Wonderland | Virgin | (-) | 95% | £29.95 |
| 10. ▼ | MIG-29 Fulcrum | Domark | (7) | 86% | £34.95 |

NE - New Entry ▲ - Up ▼ - Down = -Non Mover

AUI'S GAMES RATINGS

So you've noticed a change in the game review ratings? Want to know what it's all about? Ok, here's the lowdown.

Decision Marked as a percentage, this sums up the reviewers opinion of the game as a whole. It's not an average, but an overall score which takes all the aspects of the game into account, including the price.

Graphics: also marked as a percentage, this tells you how good looking the game is, and considers the variety of graphics and the standard of scrolling and animation, as well as the design of the graphics themselves.

Sound: does the music gee you up in an exciting, or irritating way? Do the monsters go "pop" when you kill them, or scream out a chilling death cry? Once again marked as a percentage.

Difficulty: each game we review is given a difficulty rating from 1 to 10. This rating differs from the rest in that a higher rating is not necessarily better. A game rated with a difficulty level of 1, for example, would be an absolute doddle for even the youngest or most clumsy player. A rating of 10 would reflect an extremely difficult game, which would drive the average player mad with frustration, but hold a substantial challenge for the very best gamers. We take a mark of five as an average.

To help you get a handle on the gauging of the difficulty level rating, this is how AUI would rate for difficulty three classic Amiga games.

R-type: 8/10. Rick Dangerous II: 5/10. F/A/18 Interceptor: 4/10.

ICONS

Every game review is accompanied by at least two icons. First, either a joystick, keyboard, mouse, or any combination of the three will signify the control methods it uses. The remaining icon, or icons, tell you about the type of game. We've decided on six categories: arcade, adventure, arcade adventure, strategy, sport and wargame. While some games fit neatly into these pigeon holes, others almost defy categorisation, so this is just meant as a rough, instant guide. Reflecting this, sometimes you will see a combination of icons; both strategy and sport icons would accompany a football management game for example.

Here are the icons and their meanings:

A Keyboard control

B Mouse control

C Joystick control

1 Arcade game: not necessarily a conversion of an arcade game, but one that calls on quick reactions and good hand-eye coordination.

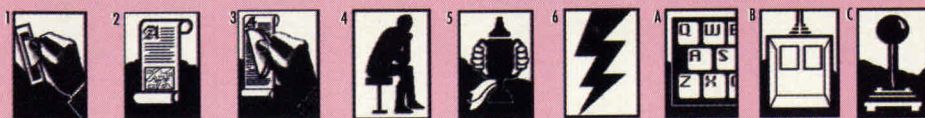
2 Adventure game: the emphasis is switched to brain power, and the game would usually consist of a quest or mission with puzzles to solve along the way.

3 Arcade adventure game: a combination of two previous styles.

4 Strategy game: this encompasses the likes of chess, management simulations and board games.

5 Sport simulation: this also includes future sports games.

6 Wargames: battle simulations of local, global or inter-galactic proportions.



Recommended Games of Recent Months

We did it first, but others copied us! But, you can bet your butt that AUI recommends the best.

Lemmings Psygnosis £24.99 100%

If you only ever buy one game in your life it's got to be Lemmings. Lemmings is based on a race of simple creatures who will walk into Psygnosis' death traps. Using various skills which you can bestow upon these Walkers you can prevent them from dying and save the Lemming race. It's new, and addictive, with four different game difficulties from fun to mayhem. You'll not find another like it.

Speedball 2 ImageWorks £24.95 91%

Spikes, rivets, balls and helmets may all sound a bit kinky, but sex fiends will be disappointed to find that Speedball 2 is a violent future-sport. Steel-plated arenas are the venues for this barbaric variation on indoor soccer. Setting new standards in graphics, with top-notch sound effects and gameplay, Speedball 2 is a bare essential for armchair sportsmen.

PGA Tour Golf Electronic Arts £24.95 94%

PGA Tour Golf has ousted Leaderboard from its throne. Hard to believe maybe, but true. Never before has golf been simulated so well on a home computer. Four 18 hole courses are there for your selection, with the option to play against computer controlled opponents. Dynamic features such as dual camera angles, action replays, contoured greens, and 3D fly-by hole previews give it a TV style feel. Realism in the graphics and the movement of the ball create a completely believable environment. A great golf game, that will run and run.

The Secret Of Monkey Island US Gold £29.99 93%

This is real quality. Unlike some adventure games, Monkey Island is much more than just a series of puzzles and locations. The graphics are superb, highly detailed and extremely varied. The script is witty, the characters brilliantly created, and the whole thing is full of all sorts of incidental details that lesser games can't touch.

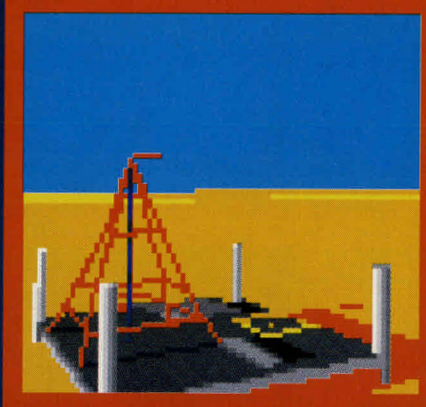
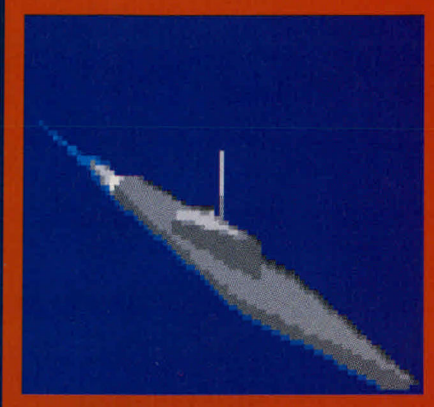
The mouse-driven menu system allows a surprisingly wide range of actions, and there's never the problem of finding words the game understands. There's four disks' worth of adventuring for your money. Not the most difficult adventure ever written, but definitely one of the most entertaining.

Wonderland Virgin £29.99 95%

Text adventures don't come any better than those from Magnetic Scrolls, and Wonderland is their best to date. This adventure features pull-down graphics windows and intricately woven puzzles throughout the plot. Using their highly developed WIMP system Magnetic Scrolls have re-vitalised the text adventure. If you are a fan of text adventures then snatch a copy of Wonderland as soon as you can!

Eye Of The Beholder US Gold £39.99 97%

EYE OF THE BEHOLDER has achieved what many many RPG's have attempted and failed to do this year.... put DUNGEON MASTER in the shade. Yes folks, it's true. EYE is everything you ever wanted in a dungeon adventure, complex labyrinths, great graphics, believable characters, excellent spell system, battle system and sound system, and above all a gameplay that is simple to learn, and brilliant to play.

TAKE OFF
FROMPRIMARY
TARGETSECONDARY
TARGET

Take off : AirBase at Suda Bay ONC VD41

Primary : Oil Rig at Beda ONC VB17

Secondary : Missile Boat at Al Bayda ONC VC28

Here's your mission brief. Make sure you jot down those coordinates and get out the right map.

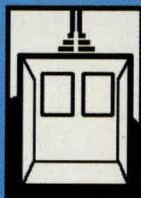
F15 STRIKE

MICROPROSE

If you want a flight simulation, you're not exactly hard up for choice. Making a buying decision is complicated by the fact that just about all of them are well worth a place in your collection. If it's a "serious" flight sim you want, Microprose are always a good bet. Their F15 Strike Eagle was first released in 1985, and now at last it's made it to the Amiga.

Microprose have always catered for those who like a massive wedge of a manual with their games. F15 II comes with a 138-page book, which apart from going to lengths to tell you how to play the game, is beefed up with a load of other info concerning real-world dogfight tactics, foreign airforces, and diagrams and descriptions of 22 planes. All very nice, but if you've had any flight sim experience, you only really need the keyboard control sheet to see you through your first mission.

There are six warzones, and four skill levels. You make your choice from both categories, and the mission is randomly generated, taking into account your choices. Each mission calls for you to destroy two targets. The locations of these targets, referred to as objectives, are given to you before the mission. Before you take off,



you should get your bearings on the relevant map, and find your two objectives.

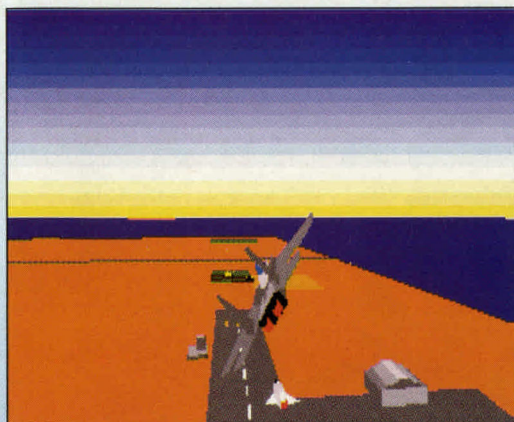
To help you find your way once you're airborne, a bold arrow on the HUD directs you to your next waypoint. You've also got an autopilot, which takes you straight where you want to go. The landscapes are pretty big, and flying from one point to another can take quite a while. The programmers have realised this could be a bit of a downer, so they've included an option to speed up the game time. Even with this however, there's a lot of flying between waypoints. On the harder levels, you're attacked more and more, and often have to break off from the job in hand to shoot down a bunch of MIGs.

Your arms are a combination of four weapon types. There are two kinds of air-to-air missiles, for medium and short range use, laser-guided mavericks for attacking ground targets, and the cannon if all else fails. Targets are selected with the help of the tracking camera, which gives you a moving picture of the target on a small VDU in the cockpit. Once you've got a lock, you can let fly with a missile, and usually it hits home. Now's the time to try out the missile view. This takes you out of the cockpit, on

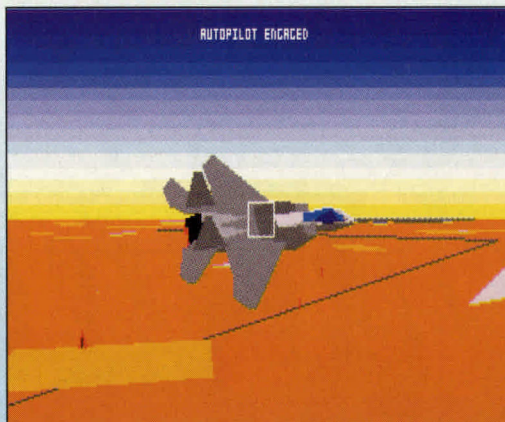
a short flight seen from just behind the missile, giving you an excellent view as the maverick or sidewinder speeds towards its target. A sampled "Bullseye!" lets you know for sure that you've destroyed your objective. Engaging the autopilot once again, you can then get on with your second objective. If you've used up all your weapons, you could try finding a friendly airbase, which can be used to re-arm and refuel your plane.

If you've played F-19 Stealth Fighter, and think this all sounds rather familiar, you'd be right. From the manual and DTPed maps, to the weapons systems, F15 II is very similar to F-19; in fact it's identical in many respects, such as the landscapes. The high-tech weapons are pretty much indistinguishable from those of F-19, and they're just a bit too clinical and calculated to get your pulse racing. Although you get good views of the enemy on the mini VDU, they rarely look more than a blip through the cockpit. Close range dogfights are uncommon, and you won't find much use for your cannon.

There are three detail settings, which affect the speed of the game; more detail makes for a slower frame rate. The visibility



After taking off, you buzz the airstrip from one of the exterior views.



Switch on the autopilot, slide into your complementary slippers, and let the computer do the legwork.



Your F15 can take a bit of flak, but it's not indestructible. There are times when you've just got to throw in the towel and make an alternative landing.



Some missions call for a carrier take-off.

EAGLE II

£25.99

range is extensive, so you don't get buildings and rivers suddenly appearing a few hundred feet in front of you. However, the scenery is no more than a collection of small rectangular huts, roads and pyramids masquerading as mountains. Where are the big power stations, towns, factories and ports? Not here, that's for sure. Partly because of the simple landscapes, and partly because the lack of any dots on the ground, there's no "ground rush", so unless you're paying close attention to your altimeter, you could find yourself piling into the ground before you realised you were that low.

There's an option to re-fly a mission that you've just failed, but that's only after you've gone through the whole process of disk-swapping and option selection. A lot of hassle would be saved if you could just restart as soon as you'd crashed.

It's not the fastest flight sim around, but it still has a reassuringly "tight" feel, unlike some flight sims that flit about like a lame butterfly. The various interior and exterior views are both dynamic and useful. The exterior views are given an extra shine by the graduated skylines.

For some, the massive landscapes will

be a pain in the fuselage. Others will find their open expanses give the game a great deal more realism than the competition. There's no doubt that F15 II is a grower. Like records, games that slowly creep into your good books are often some of the best, and stay at the top end of your own chart for longer than most. I can see F15 II going that way. There's a lot on offer, and it's one of the few games around that seems to justify its price with meaty game content. One thing that concerns me though, is its similarity to F-19 Stealth Fighter. For fans of F-19, this will be little more than a very expensive "data disk", but it's just those people to whom it's most likely to appeal.

Tony Horgan

Fly this banana!



"The visibility range is extensive, so you don't get buildings and rivers suddenly appearing a few hundred feet in front of you."

DECISION

80%

A very neat and instantly playable flight sim, lacking just a little in variety and pace. Fans of F-19 should test it first however, as it's almost the same game with a different plane.

Graphics: 77%

Minimal ground detail, but a good selection of look-around views, with an attractive graduated sky. The vectors are a bit slow at times, but never flicker.

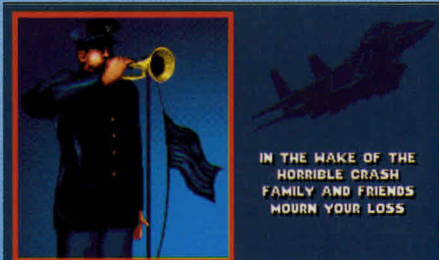
Sound: 55%

The rocket, cannon and engine effects are par for the course, but the crackly sampled speech is quite atmospheric.

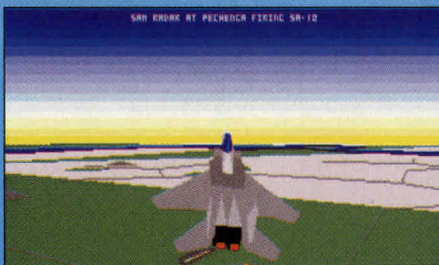
Gameplay: 81%

It probably won't grab you from the outset, but if your interests lie more in weapons technology than speedy dogfights, you'll find plenty of involving missions on offer

Difficulty: 4-8/10



A familiar scene for beginners.



The nagging threat of SAM attacks is always there.



Do a good job, and you'll get a few souvenirs to show your grandchildren.

ENTERTAINMENT



PLAYER *Manager*TM 2

by Dino Dini

PLAYER MANAGER 2 IS EXPECTED TO BE RELEASED AT THE END OF THE YEAR OR EARLY NEXT YEAR.

Many thanks for the support and constructive criticism that so many of you extended to our products. Player Manager remains to date perhaps the only real time soccer management game. Now Dino is busy writing Player Manager 2 and the draft specifications are detailed below. If you have any suggestions that would enhance the depth or playability of the Player Manager 2, please write to us.

- One M. byte minimum memory. An additional disk drive may also be required.
- Full implementation of KICK OFF 2 and FINAL WHISTLE wherever possible. A double tactics editor will also be included.
- Three division leagues with 64 teams. Two Domestic and two Europeans Cup Competitions.
- A young player must be nursed to the first team place otherwise he may burn out quickly.
- Numerous factors can cause player stress which will play a very important part in his individual match performance.
- Captain appointment. Man of the match, Manager of the month and the year awards.
- Manager performance to be put under tighter scrutiny. i.e. failure to get promotion after awhile or maintain the position at the top may lead to being sacked.
- Introduction of some really astute and high spending computer managers. A Player Manager may also get an offer to manager another team in the league.
- Facility to see the stats. of every player in the league and on the transfer market. Only transfer listed players will have price indication.
- Option to bid for a player not transfer listed and overseas players. Introduction of Scouts.
- Much improved match report with information on scoring attempts, keeper saves & possession in each half of the match.
- International caps awarded and also compulsory retirement of players reaching maturity.
- Improved financial structure. Multi-players option.
- Improved coaching with facility to concentrate on an individual player.
- Invisible management stats. influenced by individual player and team performance.
- Referees, pitches and wind may be implemented. Pre-season friendlies.

SUGGESTIONS THAT CANNOT BE IMPLEMENTED

- Enhanced graphics or facility to edit player names. Both of these take up too much memory.

Each letter received until 15th July 1991 will go into a draw. First 10 letters drawn will receive an autographed copy of Player Manager 2 and next 10 letters drawn will receive £10 record tokens.

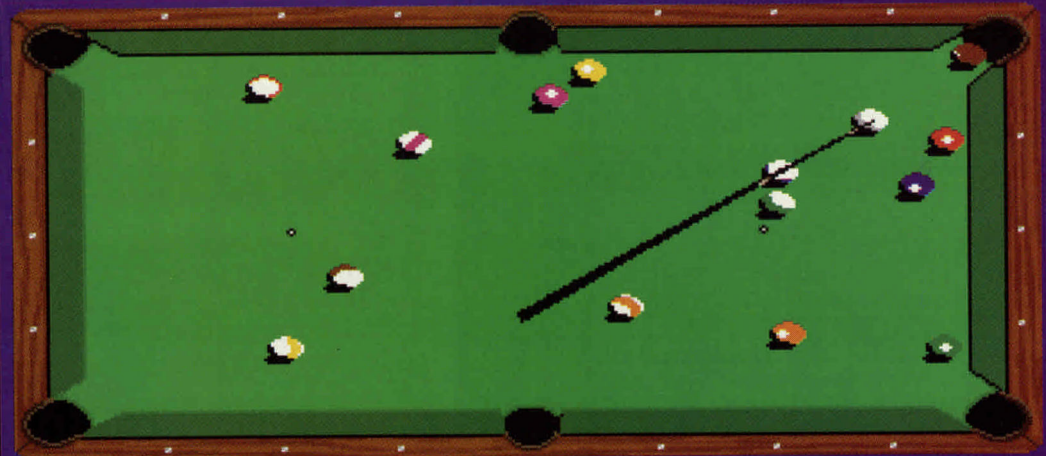
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Depress button to establish aim.



PLAYER 1
SCORE: 5
SHOTS: 1

AMIGA
SCORE: 0
SHOTS: 1

There's no ice skating here. Those balls actually roll around the table!

Fast Eddie's Pool and Billiards

OXXI INC. £25.99

Fast Eddie's doesn't just offer two or three pool variations; in all there are fourteen different games included on the single disk. Ten of these are pool games, and billiards, snooker and bumper pool make up the rest. A bonus Missile Command game is also included.

All the games are presented in same way, with the table seen from directly above. Shots are lined up by positioning a cue behind the white ball. Power is decided to an approximate degree by a pulsating crosshair on a representation of the cueball. Screw and spin can be put on the shot by moving the same crosshair to the bottom of the ball for screw, to the right for side, and so on.

It looks as if you're going to be in for a bit of treat as you start your first frame. Slamming the cueball into the pack, you realise that the balls actually roll, instead of just sliding around. Spots and stripes are used for the pool games, and the animation as the balls move around the table is excellent.

You wouldn't expect to have much success in your first few games, but after a while it becomes clear that your missed shots aren't entirely your fault. At a glance, all the balls seem to be rolling and ricocheting around as they should, but in fact it's often quite inaccurate. Even the simplest, shortest shots can go astray even though they're lined up perfectly. The problem isn't so bad that it makes the game unplayable, but when you know there's a good chance you'll miss your pot even if you've done everything right, some of the competitive edge is lost.



The Hurricane won't pot this banana

If you want to play snooker, be prepared for some pretty strange games. Fast Eddie's is an American game, so you might expect the odd slip-up on the snooker rules. Unfortunately though, the program slips up after just about every shot. There's no way you can nominate a colour, so it takes the first ball you hit as your nomination. If you hit a colour out of turn, you'll often only be penalised by four points.

During one game, playing against the computer, only the colours were remaining, but I noticed the pink was missing. Things got stranger as the computer proceeded to pot the green, and award itself three points! The rest of the balls went down in a random order, with no fouls called, until I went in-off the final ball, which also went down. This confused the computer, which re-spotted the cue ball, but left everything else down. The following few shots saw myself and the computer aimlessly knocking the cueball around an empty table, with fouls called after every shot. There was no option but to abort the game.

Depending on your view of such oddities, Fast Eddie's could be classed as terminally bugged, or just quirky. After all, the Kick Off series has had its fair share of bugs, but it's still the best game around on any machine (in my book at least). Despite its shortcomings, Fast Eddie's has some very clever and attractive features. The extremely wide variety of games on offer, details such as the rolling balls and clackety sound effects, and the lack of any rivals, all go a long way to smoothing over its rough edges

Hal Lavee

DECISION

73%

Not far off being a brilliant pool and snooker game, but it's let down by a collection of bugs and inaccuracies.

Graphics: 77%

Excellent animated balls with half-brite shadows.

Sound: 60%

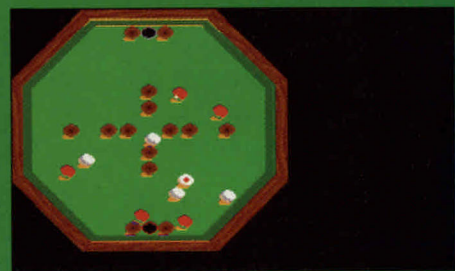
The Amiga's speech synthesis is used with predictably unimpressive results, but the sampled fx are far better. The music is okay, but a honky-tonk piano knees-up score would have been more suitable.

Gameplay: 73%

If you can stand the slight random element in the shots, and aren't too bothered about playing by the book, there's a lot of fun to be had.

Difficulty: 6-8/10

"Things got stranger as the computer proceeded to pot the green, and award itself three points!"



One of Fast Eddie's more diverse versions of pool.

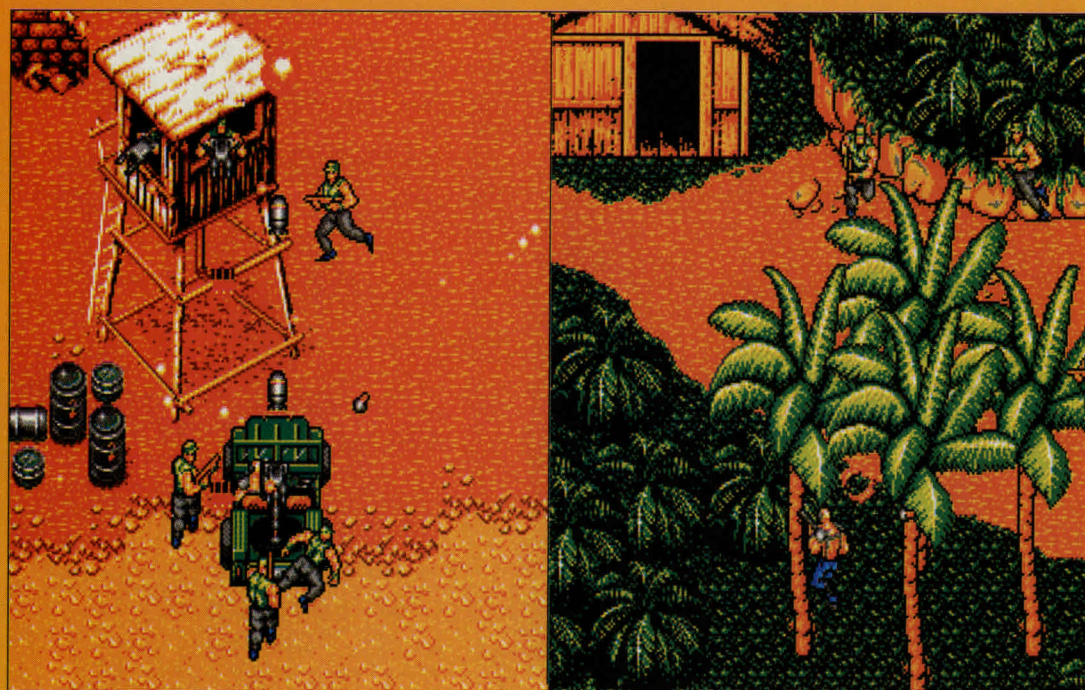


The game's understanding of snooker rules is vague at best.



Choose your game by clicking on the appropriate table, or try poking that arcade machine up at the back.

ENTERTAINMENT



The Mercs do their bit for rainforest clearance in level one.

Find a jeep, and you're relatively safe for a short while.

Mercs

US GOLD £25.99

They're getting bigger! Years ago they were about the size of your mouse. Now they're big enough to fill your TV screen! Game boxes are growing, and show no signs of letting up. Take Mercs for example. It comes in a new, bigger size box that measures 7 x 9 x 1.5 inches. What does it contain? A single 3.5 inch disk, and a small instruction sheet. What a waste of space. The record industry has managed to come up with standard, compact packaging for its various formats; isn't it time the games industry followed suit?

The box may not be standard, but the game itself sticks closely to the established Capcom/US Gold/Tiertex format. A familiar warbling tune opens the proceedings, accompanied by some big coin-op-style intro screens. It all seems to be going well, until you press the firebutton and start the game.

Once into the game, the first thing you notice is the strange shape of the screen. I've not seen the coin-op, but it's obviously one of those that uses a monitor that's taller than it is wide. In an attempt to retain as much of the original in the conversion, the programmers have used the full height of the Amiga's screen, but blanked out the sides. I suppose it's better than a small NTSC screen, but it seems a bit of a waste to reduce the gameplay area, just to keep the dimensions of the original game.

In case you hadn't guessed from the shots, I'd better let you know that Mercs is a one or two-player Commando clone.



Your job is to fight through eight levels and rescue the president. The levels scroll down the screen most of the time, but there are the occasional horizontally scrolling sections. Between shooting enemy soldiers and dodging their bullets, you'll have to blow away parts of the landscape. Continually shooting an outcrop of palm trees leads to them exploding. Likewise, walls and buildings have to be cleared at certain points. Level guardians arrive on the scene with a predictably large arsenal, usually relieving you of a life or two as they fill the screen with glowing blobs.

Although there's nothing particularly appalling about the gameplay, there's definitely nothing particularly appealing either. The strange mixture of perspectives in the background graphics can be confusing. There's more confusion when the screen gets busy, and missiles and bullets approach from every angle, but some of them seem to have no effect as they pass through you. Rather than a rampage through lines of enemy soldiers, the game often feels more like a swim through a pool of piranhas, the enemy constantly chasing and snapping at your heels.

I've nothing against the idea of a souped-up Commando game, but Mercs doesn't manage to improve on the first wave of Commando clones of the mid-80s. Who Dares Wins II, C64 Commando and Rambo all had a lot more meaty action than this. The music and sound effects were better than Dig Dug and give them a try if you

Tony Horgan

DECISION

55%

Disposable shoot 'em up gameplay with a production-line look about it.

Graphics: 60%

An occasionally untidy patchwork of slightly confused perspectives provides a backdrop to the passable sprites. The intro screens are a lot better.

Sound: 36%

The familiar, unexciting tune is undercut by the feeble sound effects.

Gameplay: 58%

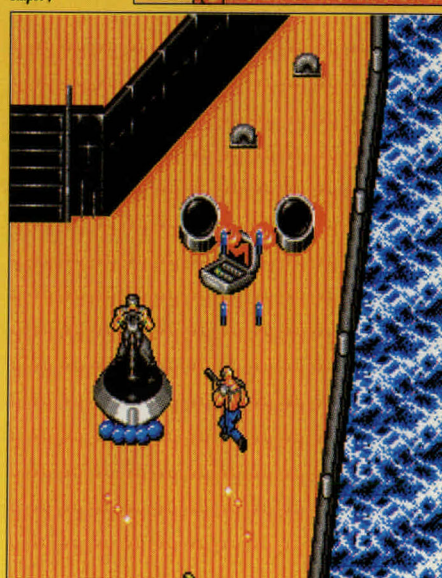
The shoot-to-kill gameplay needs no instructions, but after the first few blasts, there's little incentive to continue.

Difficulty: 5/10

A remarkably (some would say unrealistically) maneuverable jet guards the second level.



Level three takes you to the naval base, where the enemy have overrun the allied ships.



The combination of a close-range attack, and a screenful of blazing guns once again leads to unavoidable energy loss.

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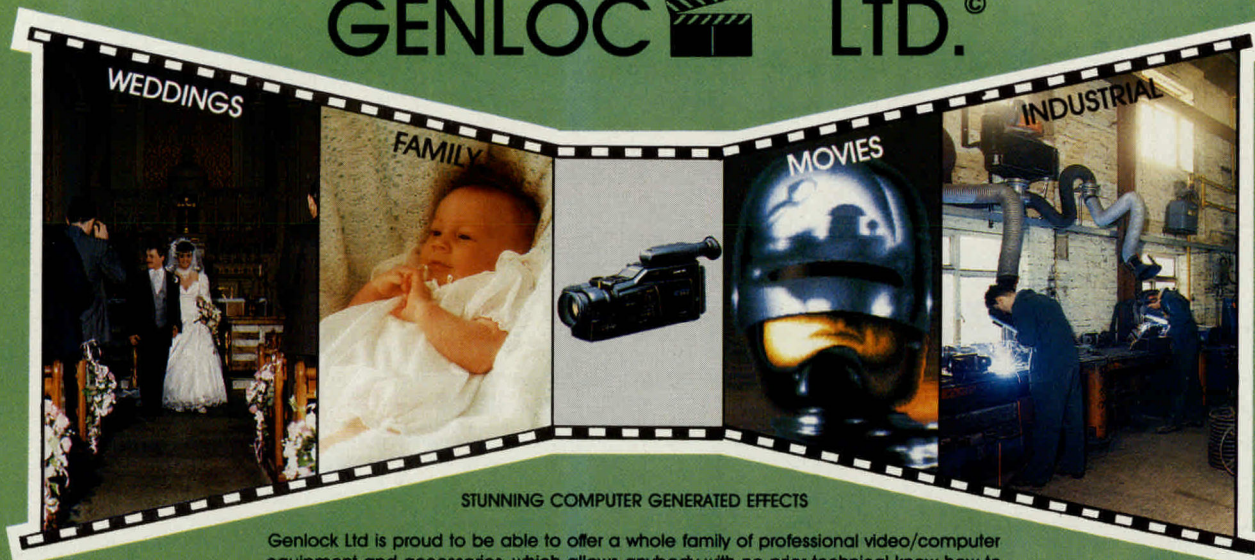
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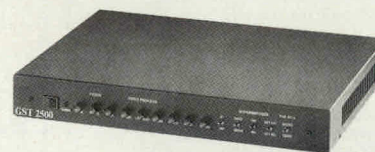
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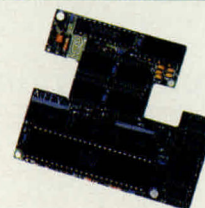
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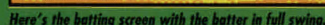
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**Domark £25.99**

Stri
this
an

**Strike 3 for
this Banana
and out!**

So it continues, until the game ends, you get bored. Computer baseball games are always going to be repetitive, but if the action is intense enough, the repetition needn't be a problem. In its favour, RBI lets out a good "crack" as you hit the ball, occasionally succeeding in creating the satisfaction factor essential for a good sports game. It's the fiddly fielding screen that lets the game down. The graphics really are tiny, and poor scrolling makes it even harder to see what's going on. Accolade's Hardball has remained the best computer baseball game for years, and RBI's challenge is fairly convincingly quashed.

DECISION

70%

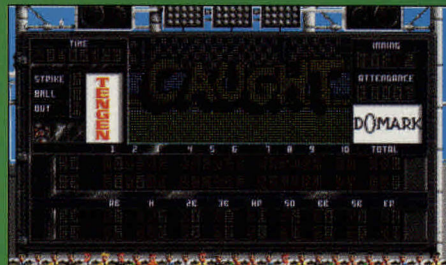
Graphics: 76%

Sound: **60%**

Gameplay: 70%

Difficulty: 7/10

It's a big hit, but the pitcher's got his eye on it for an easy catch.



Yep, the pitcher got underneath it, and the scoreboard informs you of his success.



Choose your game by clicking on the appropriate table, or try poking that arcade machine up at the back.

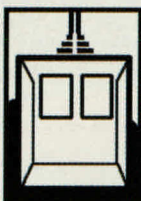
CRICKET

SOUNDWARE
£29.95

Ah, there is nothing like the sound of leather on willow on a hot summer's day, where the priority decisions lie between completing the Times crossword before or after the lunch interval, or replenishing the beer glass in time for the next over. The conversation is dominated by fascinating insights into various scientific theories, like the amount of cloud cover needed to swing the ball, or why the ball always turns on the Nursery End wicket, etc.

Unfortunately, Soundware's CRICKET falls a long way short of providing the cricketing enthusiast with a reasonable alternative to the real thing when rain stops play. In fact, I would say that it is not even worth a first delivery. The game, written entirely using AMOS is reminiscent of those awful early BASIC games where the so-called animation was so slow it was laughable. This sort of programming is pathetic on a computer with the sound and graphics potential of our Amiga.

The so-called 'sampled sound effects' amount to a horrible crashing noise when you actually manage to hit the ball, and an excited commentator shouting out after a dismissal. The 'full animation and brilliant graphics' amount to a jerky bowler staggering up to the crease to 'bowl' to a batsman whose bat is almost as big as he is, and a fielder (is it Long John Silver



without his parrot?) hobbling over to collect the 'ball'.

Yes, you do get a choice of teams, field placings, bowling and batting parameters and plenty of statistics, but why bother when the gameplay is so appalling? My advice is to wait for Audiogenics' Graham Gooch Cricket, which will be at least professionally put together.

Andy Moss



The animations are quite bad - even though the stills look alright.



Help! There's a streaker - or is that a pig - on the field.

DECISION

10%

A crude attempt at Cricket. All this game proves is that the AMOS package cannot provide worthwhile animation for sporting sims. Don't waste your money.

Graphics: 10%

Although the little fielders look pretty on a static screen, when it comes to animation it's a joke.

Sound: 5%

Two sampled noises.

Gameplay: 0%

Regresses games by five years.

Difficulty: 7/10

LBW for this banana



DECISION

81%

A concise and extremely neat wargame, short on trimmings, but heavy on gameplay.

Graphics: 40%

As you'd expect, no stunning pictures here, but the icons and maps do the job.

Sound: %

Gameplay: 83%

Lots to do, and plenty of ways to do it. There are plenty of hours of strategic thinking on offer.

Difficulty: 3-7/10

Saddam could
ave done with
this banana



Conflict: Middle East

SSI £29.99

If the Gulf war whetted your appetite for destruction, SSI's Conflict: Middle East could give you a taste of what it's like to fight a desert war from the safety of boardroom.

There are two scenarios. The first is a reanactment of the 1973 Arab/Israeli tussle, and the other is a fictional conflict set in the 1990s. SSI's claim that the game is as complex as the weapon systems used in modern combat is a bit hard to swallow, but in true SSI style, there's plenty to get your teeth into.

On the presentation front, it's pretty much business as usual. The map is a scrolling tessellation of hexagons, and commands are entered through an icon control panel on the right of the screen. A couple pull-down menus offer further options. Your command controls a range of forces from divisions to companies, and moves take twelve hours to act out (don't worry, that's not real time!). You can control either the Israelis or the Arab alliance.

Startlingly original or innovative it's not, but Conflict: Middle East delivers the goods as expected. A decent TV or a monitor is almost essential, unless you want to do your eyes a mischief squinting at the text and icons, but other than that, I've no gripes with the game at all. SSI's consistency is intact, and Conflict: Middle East is another self-groomed feather in their cap.

Hal Lavee



The familiar SSI format makes another appearance.



BLITTERCHIPS AMIGA PD

GAMES

78. The Holy Grail, a very good adventure
363. The Golden Fleece a text adventure (*)
418. Frantic Freddie the PD game, good fun
441. All new Pseudo Cop game, a shoot em up
458. Castle of Doom, adventure with graphics
477. Return to Earth, space combat/adventure
460. Flaschbier, a boulderdash PD game
551. Cluedo and Monopoly, 2 great games
552. Eat Mine, has 80 screens to play at
553. Retaliator and Pacman, 2 great games
555. Drip, a painter type of game, great fun
558. Murder, an adventure playable preview
559. Back to the Future, playable preview
562. Spaceblitz, 4 good games to play
644. Horror Zombies, a playable game preview
665. Killing Game Show, playable preview
668. Cybercon III, playable game demo
672. James Pond and Paratrooper demos
699. Yelp, a Painter type game, multi-levels
900. Blizzard, fast scrolling shoot 'em up
1014. Chinese checkers, similar to solitaire

SLIDESHOWS

781. Wendy and Lisa, pictures of the pop duo
779. Twin Peaks, pictures from the TV show
758. Yabba Dabba Doo, great cartoon pictures
667. Future Visions, more fantasy pictures
480. Saucy postcards, naughty but nice
474. Madonna Slideshow, lots of pictures
472. Viz slideshow as seen in Amiga Format
112. Space Bubbles, terrific fantasy pics
739. Slideshow Spectacular, superb hi-res.
904. Countach fantasy slideshow 1
905. Countach fantasy slideshow 2
991. Belinda Carlisle slideshow, great pics

UTILITIES

992. MED V3.10, supercedes MED V3.0 (*)
1026. MED V3.11 we bring it to you first (*)
813. Startrekker V1.2 Soundtracker clone
793. Red Sector demo maker V1.0 great! (*)
735. Flexi Base, a more friendly data base
843. Iconmania, a disk full of icon utilities
640. Mobed V1.0, a movable object editor
623. C-Light, ray tracing program very good
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993. Master Virus Killer V2.1, terrific!!
877. NORTH C V1.3 a 2 disk set £1.98
898. Audio Magic V1.1 full of utilities

DEMOS

617. The Byte Busters Mega demo, good
807. Evil Dead demo, for all you Sycho's (*)
759. Amos Creator II demo, official release
751. Colour Cycling, superb effects get it!
750. Budbrain II a new disk from Budbrain
656. Pussy Innership, good graphics and game
655. Unreal game demo, to show off your Amiga
654. Olympia, parallax scrolling at its best
598. Fractal animation, super mandelbrot (*)
597. Cool Fridge, superb Plasma effects here
547. Materialized, cryptoburners superb demo
539. Chromium, a great new demo by Scoopex
516. Purple, very large vector routines
321. Fractal Flight animation, unusual demo
287. Golam Gates Mega demo II, worth getting
132. Dragons demo I, has lovely raster effects
174. Ian & Micks mega demo, 9 parts to this
982. Total Rebase, from the Steve Wright show
983. Total Retrial, from the Steve Wright show
984. Total Restyle, from the Steve Wright show
985. Total Respray, from the Steve Wright show
986. Total Recount, from the Steve Wright show

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794. In a Silent Way, don't miss this disk!
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970. If only I could, Sidney Youngblood sample
718. Revolutions by Jean Michelle Jarre
848. A kind of magic, by Queen. Sampled (*)
716. Bomb the Base, 8 fab tracks to listen to
703. 808 remixes from the Beatmaster who else?

MUSIC

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420. Lumberjack song from Monty Python
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525. Flash by Queen, a great two disk set
968. Followin you, by Madonna great song
581. D-Mob music 4, 2 disks of good music

ANIMATIONS

43. Puggs in Space, a cute and funny demo
863. Iraq demo, rather comical animation
313. Revenge Horror Show, for psycho's only
394. Stamp Collector, an old but good demo
444. Fillet The Fish, similar to Puggs demo
631. Steves animations 1, has 8 cute anims.
632. Steves animations 2, has 6 cute anims.
789. Steves animations 3, has 6 cute anims.
790. Steves animations 4, has 5 cute anims.
791. Steves animations 5, has 6 cute anims.

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805. Franklin the Fly, hilarious and funny
763. Basketball player, superb ray tracing
866. Ami versus the Walker as reviewed
913. Mars, smooth space fighter animation
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633. Batman the movie, funny and amusing
625. Juggler II, the Juggler meets a lady
582. Stealthy II Manoeuvres, great cartoon
291. The Lotus Car chase from Agatrun
865. Coyote Strikes back, poor Roadrunner
101. The very famous "Gymnast" demo
79. Education of Cool Cougar, very funny.

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929. Maximum Overdrive, lots here & good
455. Kefrens mega demo 8, one of the best
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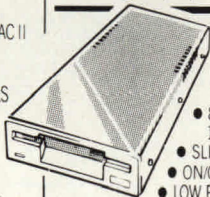
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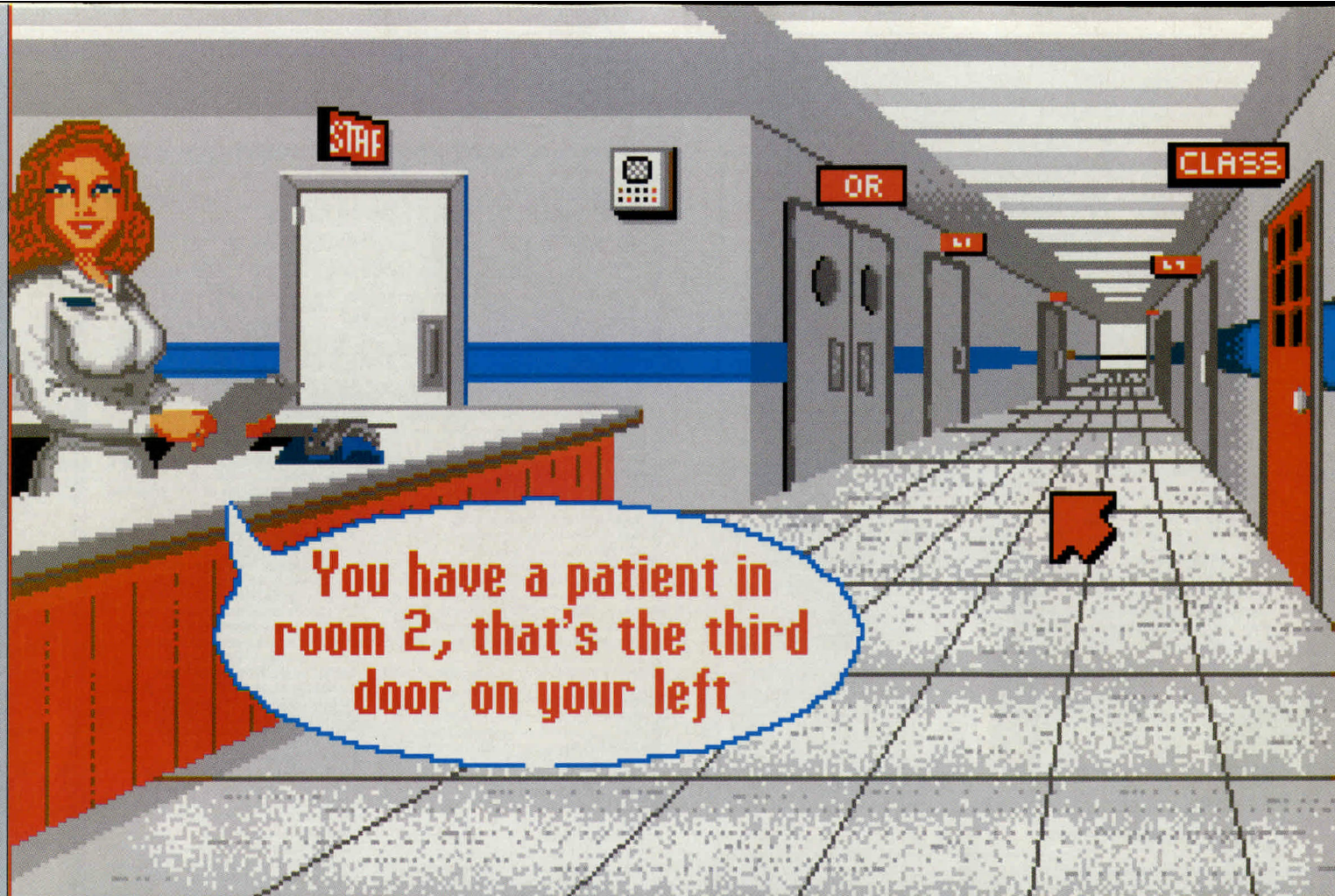
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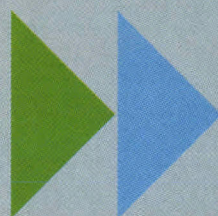
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The corridors are empty and there is very little sign of activity. This must be a private hospital.



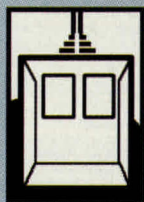
LIFE AND

MINDSCAPE

Mike Nelson, who is in real life actually needs to know the difference between a scalpel and forceps, experiences the computer game version of his bloody business.

Having a closet interest in medical matters, I was intrigued by *Life and Death* as it reminded me of a program in a similar vein (I) called the Surgeon which has been around since the heady days of the A1000. Mindscape have taken the idea a few stages further on and converted the PC version of *Life and Death* onto the Amiga. The concept is simple: you play the role of a junior surgeon in *Toolworks General Hospital* and you then get to see patients, examine them and perform basic investigations like X-Ray before deciding on a diagnosis and appropriate treatment.

The game starts with the suitably buxom nurse asking you to sign in, and she then directs you to the patients or medical school throughout the game, depending on how badly you are doing. The game design is quite clever as this medical school mode provides a kind of on-line "help", as the computer uses your mistakes to modify the lessons given; interactive teaching at its simplest! The entire game is controlled by the mouse and clicking on various objects gets the job done.



"They would rather you did not try and remove your kid brother's appendix on the dining table the next time he has a bit of wind"

For the first few rounds, you will just spend time getting to understand the system and medical terminology, probably sending quite a few patients to their various makers. Fortunately, the consequences of your negligence are not punished by being struck off or prosecuted, but a quick trip back to medical school for a gentle tutorial in keeping people alive from the Chief of Surgery, is the order of the day.

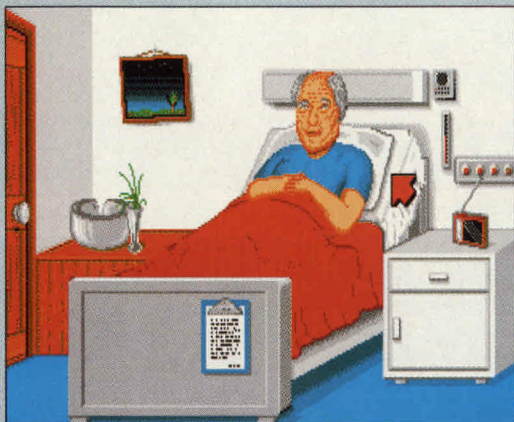
The patients are presented to you with a brief history which is virtually identical for each case (nausea, fever, abdominal pain etc), and you then examine their abdomen by clicking with the mouse. Depending on your findings, which are mainly how hard the patient screams and where you were prodding at the time (realism already), you may then like to take an X-Ray to check for kidney stones. If this diagnosis is eliminated, and all the uninteresting options exhausted, then it's time to reach for the rubber gloves and paper mask so thoughtfully provided by Mindscape. Personally, I gave them a miss as it would not do much for personal credibility to get caught playing a computer game so attired, but someone may find they help, along with a suitable partner to mop the surgeon's brow!

Moving into the operating theatre is where

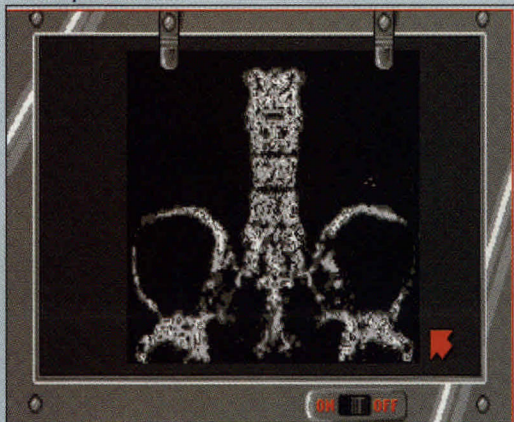
the action really starts and as a novice you will be faced with an appendectomy to ease you gently into the mutilation business, but once this is mastered you progress to the major league stuff of repairing arteries. The crux of the gameplay is essentially learning the correct sequence of manoeuvres and you get to choose your operating team who will provide help in the form of comments like "Don't you think you ought to anaesthetize the patient?". This help is quite limited and the only way really to learn is when you get summoned back to medical school by the boss just after the patient is despatched to the morgue! Before long you get another chance though and you hope you can avoid making the same mistake.

The surgeon has a number of instruments from which to choose, but also has to look after the patient's wellbeing in addition to not doing too much damage with the knife. Various drugs and blood transfusions serve to overcome the events the computer can throw at you such as abnormal heart rhythms or excessive bleeding, and again your assistants will tell you when to inject these.

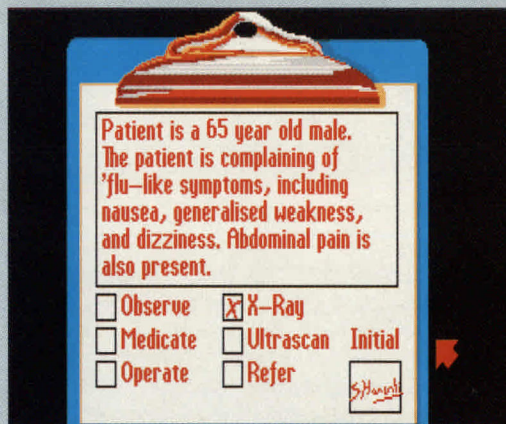
The documentation supplied with *Life & Death* is not extensive, but you are told the



You're first patient today looks as if he needs a head reduction op, but I think he may want a hair transplant. Let's ask him.



Got it! The cause is openly shown on this X-Ray. Whadd'ya mean you can't see it. It's obvious that this man is suffering from an acute case of pixel shift.



The patient discloses his problems and you must use the methods available to diagnose the cause of the problem before operating.



The nurse is not only an admirer of your medical observations. It seems!

DECISION

65%

Slow progress would frustrate many would be surgeons.

Graphics: 60%

Would look more at home on a 16 colour PC than an Amiga.

Sound: 50%

A few grunts and groans, and a machine that goes bing!

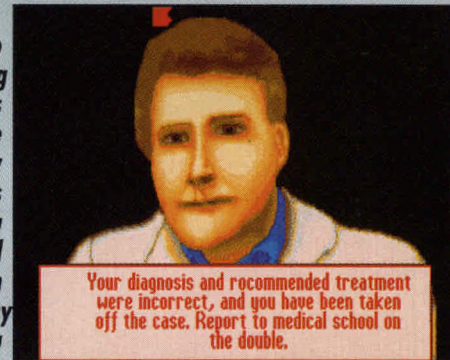
Gameplay: 70%

Once you get into the operation the fun really starts.

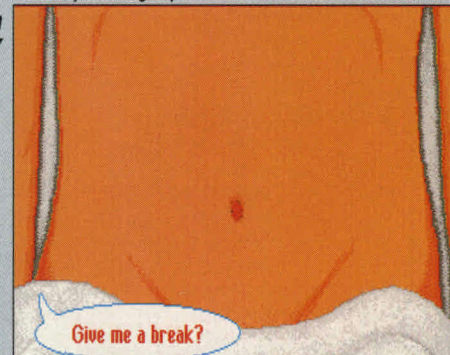
Difficulty: 8/10



The patient is dead. But, not to worry he has signed a liability clause in his contract, and not only owes the hospital a lot of money, but his dependants cannot sue for your negligence and incompetence.



However, you do not go unpunished and it's back to med school.



One of the pleasures of being a doctor is teasing the female patients.

DEATH

£25.73

basics of surgical procedures, but most of the gameplay is learning by making mistakes, something which some people find challenging but others get irritated by constantly having to restart the game just to find out where the next incision should go; the "Save" facility will only work in between patients, so experimentation is quite a time consuming business and this can detract from the gameplay. Also included in the box is a brief history of surgical practice which makes interesting reading, if only to reflect on the days when barbers used to take time out from cutting hair to have bash at gall bladders!

The graphics and sound are relatively primitive, reflecting the conversion from the PC, but overall the game works quite well and seems to behave although the version tested has been updated to cure a few little bacteria (sorry, bugs). Installation on a hard drive is possible, but the disk swapping syndrome isn't unbearable if you are running off a single floppy. Irritatingly, the program does not have icons for Workbench and will not exit back to this environment or multi-task. Protection is via a security coded wheel device, disguised as a pager which other doctors use to contact you to pass on inane messages

like "Let's be careful out there!"

Mindscape are very keen to point out that Life & Death is a game, albeit designed with realism in mind, but they would rather you did not try and remove your kid brother's appendix on the dining table the next time he has a bit of wind, or maybe repair granny's aortic aneurysm with half a bottle of gin, some Sheffield Steel kitchen devils and a few Band Aid! Leave that sort of behaviour to the professionals who at least have real rubber gloves!

If you like strategy games which are mainly a process of elimination and learning or have a thing about rubber gloves, then Life & Death may well keep you amused for a good while (not as long as going to medical school for real, believe me), but if you tend to get easily annoyed by a lack of progress then perhaps surgery is not your cup of Earl Grey.

Pass the
Banana,
Nurse

Mike Nelson



"Moving into the operating theatre is where the action really starts and as a novice you will be faced with an appendicectomy to ease you gently into the mutilation business"

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Short Reports

Double-Double Bill

Mirrorsoft £35.99

Four of Cinemaware's back catalogue have been bundled for Double-Double Bill: TV Sports Football (see last month's review), TV Sports Basketball, Lords of the Rising Sun, and Wings.

Over Cinemaware's last few years, TV Sports Basketball was the only release that failed to live up to their stunning reputation. The on-court action takes place on two still screens. One screen doubles up as the basket-end for both teams. The other just shows the players running from one end of the court to the other, and has no player interaction at all. There are some excellent off-court graphics, and the sprites are very neatly drawn, but the game is let down by slow programming and the consequently unresponsive controls and limited gameplay. Still, the rest of the compilation is strong enough to prop it up.

Lords of the Rising Sun is no less extravagant than the rest of the Cinemaware range, but the cinematic style is not so prominent. It's more or less Defender of the Crown set in twelfth century Japan. As the leader of a warring clan, it's your job to conquer the country, through land battles, sieges and diplomacy. If you're not



Double-Double Bill



Double-Double Bill



interested in Japanese history, the scenario can be a bit of a turn off. It works the other way too, and if you get into it, there's an engrossing and long-running challenge to be met.

Wings ranks with Rocket Ranger and Defender of the Crown as one of my favourite Cinemaware games. The atmosphere generated by this first world war drama is second to absolutely none. You assume the persona of an allied pilot based in Northern France. There are three types of mission that crop up. Bombing runs are a fairly straight forward vertically scrolling affair. Strafing runs are rather more involved, calling on you to take out soldiers and vehicles, while avoiding Red Cross ambulances. The bulk of the missions are patrols. These take the form of 3D vectored dogfight simulations. These short range dogfights are far more intense than the auto-pilot combat style of most flight sims. It's all done in a format that's very un-American, neither gung-ho or overly sloppy and buddy. The music fits the game perfectly, and along with the diary-style narrative, rounds off a superb game.

The compilation would be worth buying just for Wings, if it weren't out on its own for less. The other three won't have quite the same broad appeal, but if two or more sound like your thing, give it a shot.

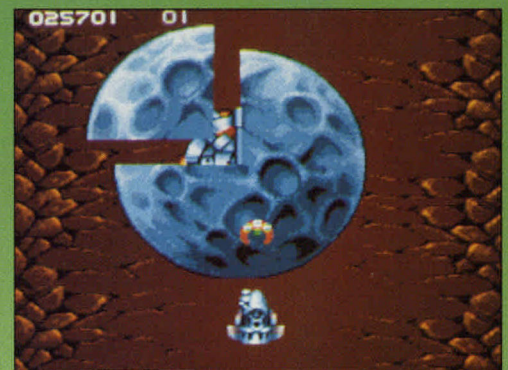
Frenetic

Core £25.99

Frenetic: it's certainly that! Well, I think that's what I'm supposed to say. Actually, flaccid, futile, or frankly tedious would be more apt descriptions. Frenetic is a shoot 'em up that suffers from an acute lack of originality. We were subjected to a glut of sub-standard Xenon clones two or three years ago, but I thought we'd seen the last of those.

When they write games around their programming ability, Core are capable of producing some excellent stuff. Smooth scrolling isn't one of their stronger points, and that of Frenetic is a real strain on the eyes due to a constant blur. The sprite movement is in a similar league. If there were any decent aliens, meaty weapons, or thundering sound effects, any of these slips could be overlooked. However, there's nothing to redeem it, and only a sub £10 price tag would make it worth a second glance.

Rating: 40%



Frenetic



Sharkey's Moll

Zeppelin Games £7.99

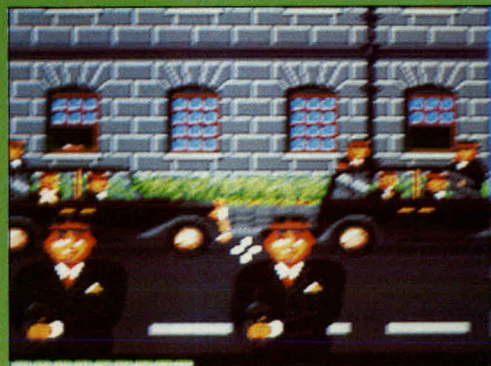
It's a versatile old format, the Operation Wolf variant. All you do is change the graphics, and you've got a Vietnam simulator, any number of film tie-ins, a shark hunt, a fairground duck-shoot, or in this case, a 1920s gangster shoot-out.

Sharkey's Moll is mouse controlled, and follows the format to the letter. Most of the gangsters run around in the background, taking occasional shots at you. Others drive past in cars, and of course there are the occasional close-up encounters, when you get a baddie right in your face. The left button controls the machine gun, and the right launches molotove

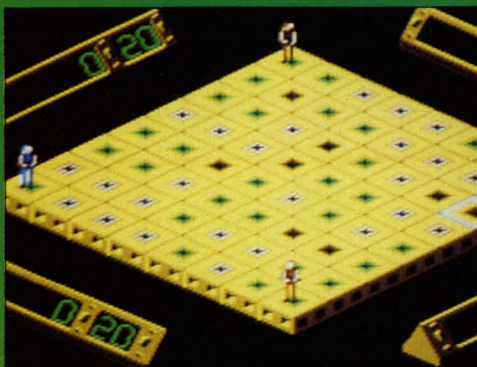
"The left button controls the machine gun, and the right launches molotove cocktails."

cocktails. It's no eye-popper, with a mainly black and white colour scheme, for authenticity I suppose. Sharkey's is far from the best example of the style, but at the price it could please Op Wolf junkies.

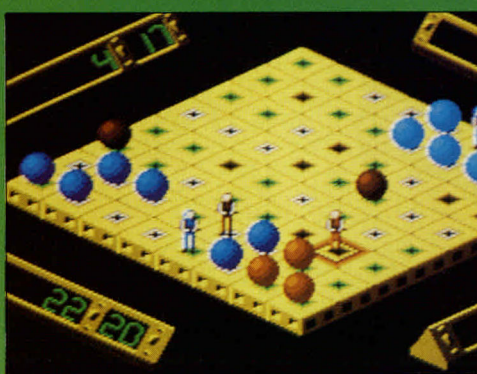
Rating: 65%



Sharkey's Moll



The Ball Game



The Ball Game

Electronic Zoo £25.99

The trouble with "clever" games, is that they're often too clever for their own good. It's all too easy for a programmer/designer to get wrapped up in devising a set of "fiendish" logic rules for a strategy game, and forget to put in any worthwhile goals or gratifying features. One of the gratifying features of Tetris, for example, is the way you can lop out a whole wedge of blocks in one go. Amidar and Qix used the filling of the screen as a satisfying "pull". Defeating an army, or capturing the other players counters are favourite techniques of more strategy-inclined games.

The Ball game has none of these, and instead, its strategy-puzzle mix seems rather pointless. You can master the art of creating balls on high scoring squares, but it's unlikely that you'll have much fun in the process. Challenges without rewards are frustrating and in this case, extremely tedious.

But you had better try it for yourself. After all, I was one of those who didn't like Tetris!

Rating: 35%

Geisha

Tomahawk £25.95

Oo-er, it's another one of those saucy French games! A "heady, sensual, magic adventure" is how the blurb describes it. As with most of these French pseudo-adventures, Geisha is pretty weird. What doesn't get lost in the translation, in rendered meaningless by the lack of context and the seemingly random flow of the game. Vague isn't the word...

Your task is to rescue Eva from the lustful advances of dragon. One moment you're moving a scrolling window around a Paris flat that's occupied by a naked woman, then you're somewhere in Japan, and then without any explanation, you find yourself talking in cryptic proverbs to a strange man. Seemingly irrelevant comments and graphics pop up now and again, making it all seem like some kind of surreal, completely illogical nightmare. If you're looking for sexy graphics, you won't find much to tickle your fancy here. If you want a decent adventure game you'll have a similar lack of success. Don't even consider it.

Rating: 15%

Tony Horgan



Geisha



Short Reports



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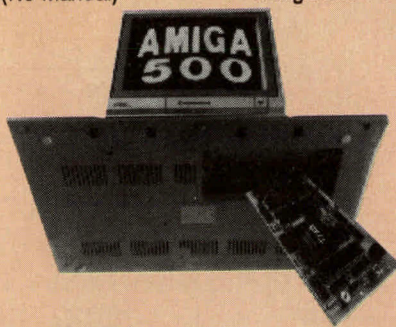
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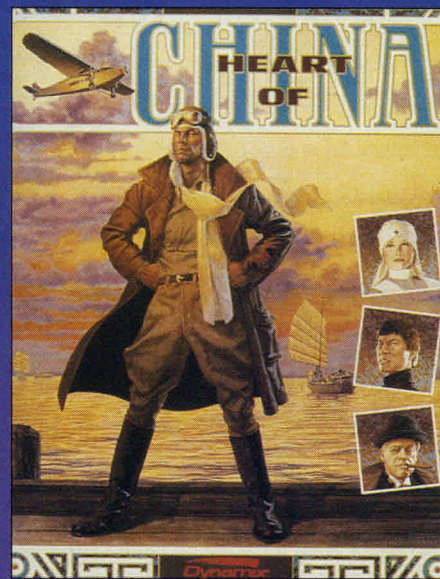
ADVENTURE NEWSDESK

THE SIERRA FAMILY JUST KEEPS ON GROWING

NOW! WITH ANDY MOSS

Lots of good stuff is soon to be coming out from Sierra, who seem to be on the verge of producing a faster, and more tuneful Amiga converter. PC owners would know RISE OF THE DRAGON from stable mate Dynamix, which is very BAT like in appearance, using static picture vignettes to illustrate the adventure, well, the follow up release is a stunner called HEART OF CHINA. This adventure uses full video imaging of real live actors to portray the characters, along with beautifully drawn backgrounds. The interface is point and click, with a full stereo soundtrack, and the plot is an all-action yarn in the mould of Indiana Jones. Set in the 1920's, you get to explore the streets of Hong Kong, brave the snow of the Himalayas, and ride on the Orient Express, to rescue Kate Lomax, daughter of a ruthless American land baron, who is held prisoner by a Chinese rebel leader. I have played the PC version and I can tell you that it is really something, real time action, complex character interaction, plenty of puzzles and an intricate branching storyline. The screen shots here only go a tiny bit toward showing the game in all its glory. Seeing is believing!

So many new fads come and go, one arcade clone after another. But there is one type of computer game that always remains a constant and consistent challengepitting oneself against a cunning adventure author who throws every trick in the book at you. Beating the system is everything, not just racking up high scores, but getting the satisfaction of knowing that your mind is even more cunning than your adversary. Yes, adventures are here for ever. Will they say that about a Gameboy?



▲ Heart of China.

How can you follow that? Sierra are close to releasing the Amiga versions of SPACE QUEST IV, KINGS QUEST V and a multi level dungeon adventure ZELIARD. TRIAL BY FIRE is reviewed here this month.

ACCOLADE OPEN IN UK

Not to be outdone by Sierra, Accolade have now opened up their own office in London, and celebrate with some new releases. BILL AND TED'S EXCELLENT ADVENTURE, is a game for the younger heroes amongst us featuring a trip through history. Wacky time travellers, Bill and Ted pose puzzles to Socrates, jam with



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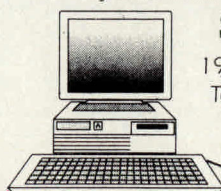
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▲▲ Heart of China.



Beethoven, munch niblets with Ghengis Khan and search out Napoleon at Waterloo. In the States, the film of the same name has been a smash hit, and pics from the movie are included in the program.

THE CARDINAL OF THE KREMLIN is also due out this month, and features the riveting story of spies and scientists, negotiators and covert operators masterfully linked in the techno race to develop a Star Wars defence system. Based on the Tom Clancy novel, the game is a thriller based on maintaining Americas strategic defences from the Ruskies. A whole techno team of scientists and programmers and spies are put at your disposal. Sounds gripping, watch for the review right here. LES MANLEY LOST IN LA is the sequel to SEARCH FOR THE KING (reviewed next month) and stars Accolade's version of Leisure Suited Larry Laffer. Your goal is to prevent Les from falling victim to the temptations of the Southern Californian lifestyle, fame, fortune and females, and solving Hollywood's most sinister crime.

A combination of digitised photos and hand painted pictures promises us a feast

of colour. Let's hope the gameplay delivers.

And finally, ELVIRA II: THE JAWS OF CERBERUS, features her again, only this time she has fallen pray to a three headed sixty foot demon. Hidden somewhere within a huge movie studio complex, ELVIRA II provides three completely different film sets to explore, a spooky victorian house, a huge spider's web and a fog enshrouded graveyard. Update as soon as I get it.

ADVENTURE REVIEWS

EYE OF THE BEHOLDER US GOLD/SSI

I never though I would say this but EYE OF THE BEHOLDER has acheived what many many RPG's have attempted and failed to do this year.... put DUNGEON MASTER in the shade. Yes folks, it's true. EYE is everything you ever wanted in a dungeon adventure, complex labryinths, great graphics, believable characters, excellent spell system, battle system and sound system, and above all a gameplay that is simple to learn, and bril-



▲ Eye of the Beholder.



▲ Eye of the Beholder.



liant to play.

The city of Waterdeep has a problem, well, don't they all? Deep down in its sewers are things that are not of the nice and pleasant variety, namely horrible monsters, including Beholders, that have ten little eyes and one big one! The word on the street is that there is a criminal conspiracy hiding out down in the sewers, and you have been chosen to lead a party down into the depths. Everything in the game is in the first person perspective, walls pass you by, items you find, or closed doors that need to be opened or levers that need to be pulled are all operated by pointing and clicking with the mouse. Fighting is handled by USING the weapon that is in the hands of your characters. Simplicity itself. Even wounds are not too much of a drawback, as a short rest can do wonders for your recovery, with a little help from your resident mage of course. A pre-built party awaits you on disk for those who prefer to get straight into the fray, whilst a character generation routine is present for the really serious players.

The first three levels are somewhat mapped out for you, by that I mean there are a few rooms and traps missing on the map provided but it is a good and thoughtful way to get into the game proper.

You will spend hours on this, I promise. Each turn of a corner makes you go and turn another, and each puzzle solved drives you onto the next. Move over Dungeon Master, the King is dead, long live the King.

RATING 97%

TRIAL BY FIRE QUEST FOR GLORY II SIERRA 1 MEG ONLY

I have always been an ardent Sierra fan, because for me they have pioneered the animated adventure game, and have continually stayed up there producing quality games with great plots and stylish graphics. We could be picky and say that in the conversion to Amiga from MS DOS the games always lacked speed, but each scene was such a delight it was worth the wait.

With HERO QUEST our patience was severely put to the test, with, for instance, some of the desert screens taking up to three minutes to load in and when you are lost in the desert that is no joke. However, in HERO II I think that they have gone completely OTT. With a ridiculous EIGHT DISKS to wade through, TRIAL BY FIRE is over ambitious to say the least. Perhaps Trial By Boredom should be a better title, with some agonizingly slow access on all the screens, which let's face it is not fun to play for anybody, no matter how dedicated they are.

Lorey and Corey (are they for real) Cole have tried to pack just about everything except an extra disk drive into this game, and it fails because of it.

The story brings back your hero thief, fighter or magician, fresh from saving Spielberg into the land of the Arabian Nights, to the city of Shapeir, where you arrive on a magic carpet. Shapeir though

has a dark and evil mirror image called Raseir which is threatening to overrun it with evil. Only you can free Raseir from its evil grip and thus make two cities free again.

Unfortunately, by the time you get around to it your Amiga will be a museum piece. Sorry Sierra, not this time.

RATING 60%

DEMONIAK

Palace 1 Meg only

As text adventures go, this is a unique experience. Demoniak is a bold stab at continuing the multi-player theme that Level 9 began many moons ago. Written by Alan (Judge Dredd) Grant the game provides you with a group of characters, actually superheroes Johnny Sirius, Kyra (Flame) Brand, Madlok, and Sondra who, together with Doc Cortex, go on a mission to prevent the Evil Incarnate who is Demoniak, entering our Universe by sealing his gateway. At any one time, you control the actions of a single character, and see the world through their eyes. However, you may become another character, even an enemy, whenever you want, and see what is happening to them. This proves to be quite a complex situation, as you could end up as the enemy fighting amongst yourselves to beat you, if you see my drift. One of the characters can also perform mindreading, this lets you see what another character is seeing even if it is on another planet. The manual suggests for a laugh that you mindread someone who you are fighting with.

The parser is very serious, and owes a lot to the Mag Scrolls style, in that it can understand complex sentence structures like 'Put the key in the box in the cupboard' or 'get everything except the little panties'. One thing to watch out for is the parser taking you literally. For instance 'Shoot Guard with gun' will be fine, but 'Kill guard with gun' means that you will use the gun as a club, which is not really what it is best at.

The game is labelled as PURE FICTION which simulates a game world with independent and interacting characters, that keeps track of all off screen action.

There are over fifty independent and intelligent characters in the game, and whilst the game has an ultimate goal to achieve, there are many, many ways to get there. Apparently there are even ways the programmer does not know about due to the way the system has been designed.

The still frame graphics are straight out of the 2000AD comic book style, very weird, colourful and almost Monty Python-like. But that is Demoniak. A very weird but very good text adventure.

Rating 90%



▼ Demoniak.

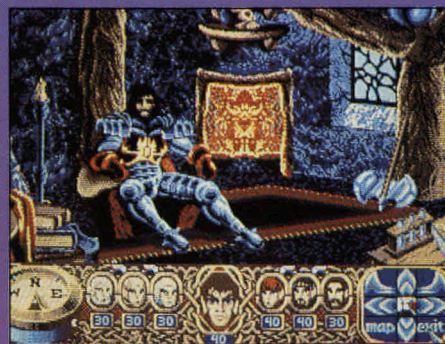
CRYSTALS OF ARBOREA SILMARILS/PALACE

Whilst we are on Palace products, here is CRYSTALS OF ARBOREA, unfortunately a bit of a let down RPG.

It is the same old story, four crystals of harmony have been stolen and are hidden throughout the land. Your party must find them and return them to their sacred shrine. The game is split between a map screen and a first person view of a land of forests and lakes and a few odd towers, and not much else. With 1600 locations to visit, it all looks a bit samey I am afraid to say. The fight sequences are a bit rudimentary with



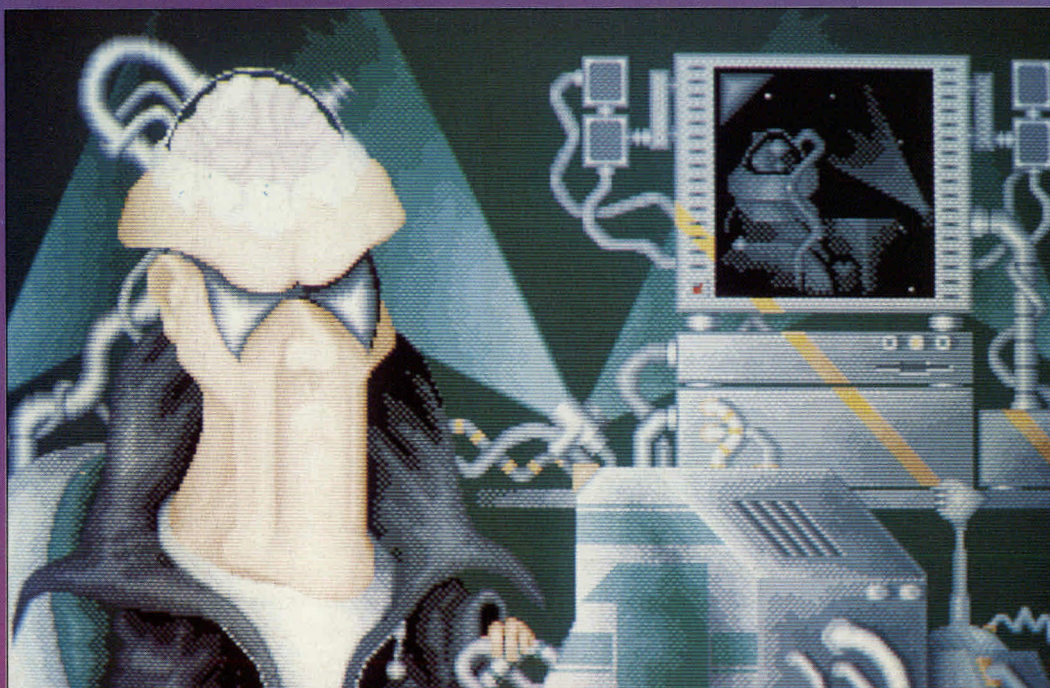
◀◀ Crystals of Arborea.



hex type movements that seem to suggest an older battle routine has been included in a modern day game perhaps. All the regular RPG functions abound, character generation, magic, puzzles, but I can't help feeling that there is nothing new or exciting about it. In fact it is all a bit dull and uninspiring, but appealing to hard core RPGers who feel winning is everything.

RATING 60%

That's it for this month. Next issue, some hints on completing Monkey Island, and reviews of Spirit of Excalibur, Railway Tycoon and Tower Fra. See you then.



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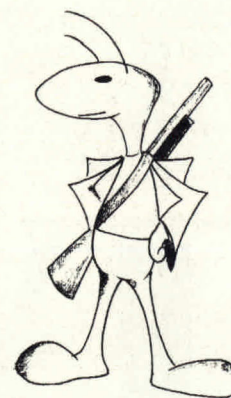
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TurboTe

'A superb product' says Mike Nelson as he tests out a program that challenges for the lead in the Amiga text editor arena.

If you thought that CygnusEd from ASDG was the best thing in editors since stone tablets were replaced by paper, then think again because Oxix have recently launched a rival editor called TurboText. We reviewed CygnusEd last year and the verdict was very favourable indeed as it was without doubt the best editor around for the Amiga, and arguably on any computer, but TurboText is set to challenge this position very strongly indeed.

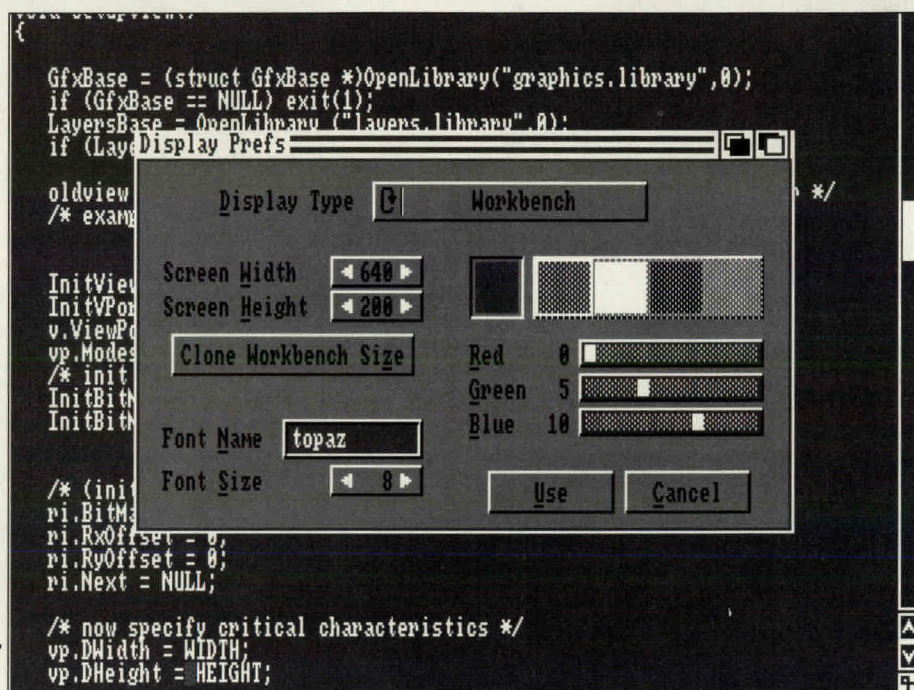
I must admit to being sceptical about new editors as they seem to come out just as you were getting used to the previous crop, but TurboText is almost completely user-definable so it can behave like any number of "standard" programs, including CygnusEd. I will return to this feature later on as it is most impressive.

Although CygnusEd has a very good Intuition interface, it is not completely standard as windows are not used for the documents and its own use of "Views" can be clumsy, but is very fast indeed. TurboText is perhaps a shade slower in scrolling, but does employ standard Intuition protocols in every department. Further, Oxix have gone to great lengths both to support version 2.0 of the operating system (and that looks incredible to say the least), but also enables TurboText to run happily under 1.3 with the nice three dimensional look of that elusive upgrade. (Hint to Commodore there!). The menus in the default layout are clear, easy to use, and the requesters are equally as functional. Programmers used to other editors should have few problems acclimatising to the new environment. Everything is available under mouse control, with suitable keyboard shortcuts and on-line help for die-hards.

Installation on a hard disk is a simple

"Everything is available under mouse control, with suitable keyboard shortcuts and on-line help for die-hards"

"TurboText can be configured to emulate almost anything under the sun"



matter of dragging the icons across to the desired partition and altering the startup sequence accordingly. TurboText can be launched from the CLI or Workbench and also a small utility called TTX is employed to police the procedure so that only one copy of the main program is kept in precious memory, no matter how many individual documents are being worked on. Definable "hot keys" are implemented so you can call up TurboText when it is asleep in much the same way as CygnusEd works. All this trickery is Amiga-friendly and does not seem to interfere with other programs which may be running. In fact, I didn't experience any Gurus with TurboText, despite trying some pretty way out things.

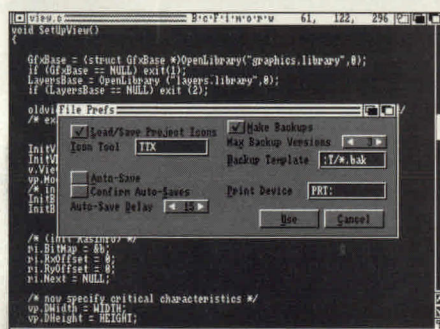
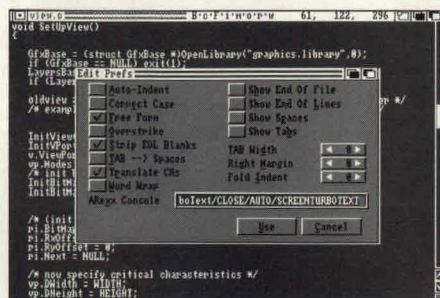
TurboText is packed with all the features you would expect for manipulating text, but is not really designed for word processing as such. It is aimed more at programmers for entering their source code, and very useful it is too. The clipboard device is supported so sending text between different programs is a simple

matter of posting the data out to this temporary store, and then reading it back into the destination. This mechanism is becoming more accepted in the Amiga world and can only benefit its standing in the productivity arena. The other rapidly expanding standard is ARexx, the script language which allows you to control the function of programs externally. Naturally, TurboText has a full ARexx interface and the package comes complete with a number of example scripts that provide useful features like stripping out all blank lines, counting words, or sorting lists alphabetically.

Macros are obligatory in any text editor worth its salt, and TurboText is certainly worth its salt, a sizable amount of pepper and well into the vinegar as well. You can get the program to remember your keypresses and assign these to a macro that can then be saved and invoked with single selections. This facility is very handy for doing lots of repetitive operations such as search and replace.

A trendy innovation in editors is the

xt Editor



"You can get the program to remember your keypresses and assign these to a macro that can then be saved and invoked with single selections"

concept of folds. This is a means by which the components of a document are compressed, improving readability, and TurboText allows you unlimited folding, a very useful feature for programmers. For instance, if you have written a sizeable program, it often gets difficult to manage further additions because of all the scrolling around. With folds, you would squash whole chunks of code such as functions or subroutines into just the label and a fold marker on a single line. It is then easy to expand the text to full size again for viewing. Note that this does not affect the data in any way at all as the information for folds is not stored in the file itself, but in its Workbench icon file so your compiler is not going to get upset at finding gibberish. It would have been a nice idea if you could have a window with all the folds (and book marks for non-folded text also supported), so you could use the mouse to jump around

the program much more elegantly. I daresay some enterprising ARexx programmer could incorporate such a system without too much trouble.

I mentioned the ease with which TurboText can be configured to emulate almost anything under the sun, and this is accomplished using simple ASCII files to tell the program which keys do what and also the menus may be re-defined. You are then free to alter the supplied files to suit your own requirements, but the common editors from the Amiga and PC worlds are already there in addition to definitions for French and German menus for our continental friends. If this isn't enough, you can also get TurboText to verify everything you type against a pre-defined dictionary of terms, a sort of spell checker for programmers. Most of the main languages are provided already and the annoying syntactical errors which can delay programming should be all but eliminated. To make this excellent feature totally sensational, could I ask that Oxxi include all the definitions necessary for programming with the Amiga ROM routines as some of them are a real nuisance to get right, take the example of SwapBitsRastPortClipRect()!

It is impossible to describe every feature of TurboText as there are simply so many. In this review I hope to have introduced the main points that make TurboText really stand up and demand close attention. This is a superb product which both amateurs and professional programmers would do well to scrutinise carefully, but whether it would make an established CygnusED user break down and cry is debatable as this too is an excellent editor. However, the fact that version 2.0 of the operating system is extensively supported, along with its more standard Intuition usage, should ensure TurboText does extremely well.

```

ps.library",0);
);
save current view to restore later */
ntuition if started from WBench */

TurboText Information
TurboText 1.01 (29-Mar-91)
Copyright © 1991 Martin Taillefer
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ARexx port name    TURBOTEXT0
Visible lines      296
Folded lines       0
Total lines        296
Characters         8236
Average chars/line 27
Available memory    2416832

void SetNewRastPort () {
    static UBYTE oldun;
    oldun = (oldun == 2) ? 1 : 2;
    if (oldun == 1) CurrentRP = rp2;
    else CurrentRP = rp;
}

```

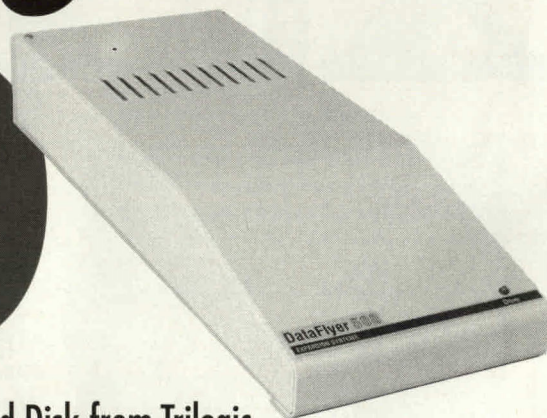
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TEST DRIVE

TEST DRIVE

Data Flyer

500



It would seem that the Amiga market may soon be awash with hard drives. However, though until now many believed there has been nothing to beat the A590 for price, as we all know the 80ms access time and the 20 meg capacity is not really good enough.

I went in search of something that would be large enough to take all my programs and leave plenty of room for more. the original aim was for 40 Meg but more is always welcome.

The first drive to be seriously considered was the modified A590 from Evesham Micros. The next on the list was Power Computing's 40 meg drive. This looked promising but at the Christmas show they only had one on display and that was broken! The other thing which I was not too happy about was the fact that you need to plug the hard drive into the 68000 processor socket.

Finally one which I decided to have, it has only just appeared on the market, sneaked into the corner of Trilogic's usual advert was a mention of a hard drive interface to which you could add your own SCSI hard drive. You could also buy a complete unit all ready set up, formatted and ready to go. I took the second option, complete with 48 meg and 28 ms access. This was advertised at £389.99 but when I called Trilogic I was quite surprised to find that the price had dropped due to a special offer to £349.99.

"I used my letters' window with 70 icons on a floppy disk. This took 1 minute 41 seconds normally, but only 14 seconds with the hard drive - 7 times faster!"

The drive was delivered on the day promised. I was impressed, far too often we are disappointed by late delivery. I always check before I buy that the item is in stock.

28 Watts

The drive is built into an aluminium case which is shaped and coloured to fit alongside, and with, the Amiga. It has no power supply as standard, the manufacturers judge that the Amiga power supply is capable of powering almost any

"There is no doubt that the hard drive takes the power supply to its limit"

Douglas Rankin tests a new Hard Disk from Trilogic which is fast and easy to setup and inexpensive.

drive up to 84 meg. The drive supplied a Seagate ST157N needs 28 watts to run. This is made up of 2 amps @ 12 V and 1.6 amps @ 5V. The stated output of the standard Amiga supply is 1 amp @ 12 V and 1.6 amps @ 5 Volts, so this appears to overload the supply.

The reason that the hard drive still works is that the rating of the supply is maximum constant output, the 28 watts needed for the hard drive is only during startup as the motor spins the drive up to speed. the startup of the hard drive takes a very short time during this time the computer has not initialised the internal floppies and this leaves most of the available power to the hard drive.

There is no doubt that the hard drive takes the power supply to its limit. But my Amiga has 3 floppy drives and 1 meg of memory and with this setup the Dataflyer performed faultlessly.

"The manufacturers judge that the Amiga power supply is capable of powering almost any drive up to 84 meg"

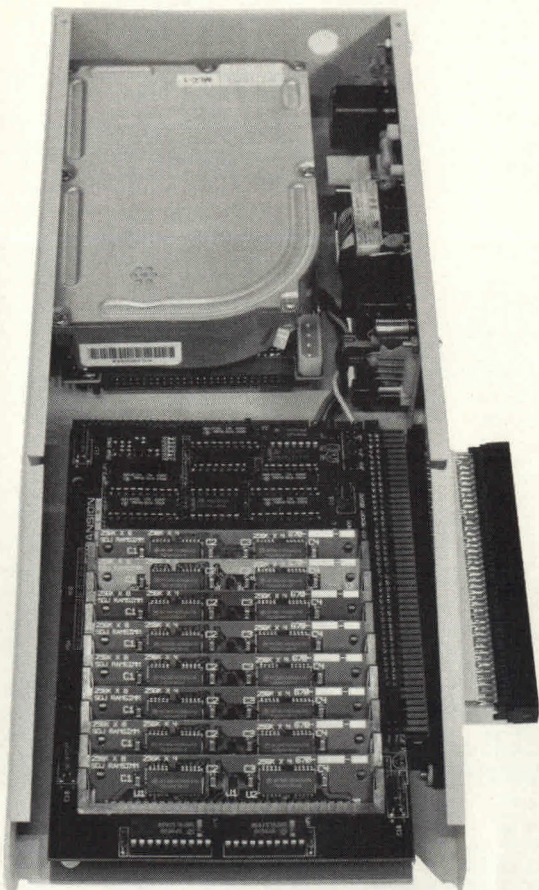
A power supply is available as an extra if required I would strongly advise anyone running more than the DataFlyer on the Amiga to invest in the power supply or an upgraded Amiga P.S.U.

Now to the dreaded bit - setting the hard drive up. I expected to have to set up all sorts of things before the drive actu-

ally worked, like adding Workbench and setting up directories on the hard disk. To my surprise and relief, the setup consists of removing the plastic cover from the left hand side of the Amiga, plugging in the Data Flyer drive and switching on! The DataFlyer comes formatted using the fast filing system and DOS 1.3 installed.

"To my surprise and relief, the setup consists of removing the plastic cover from the left hand side of the Amiga, plugging in the Data Flyer drive and switching on!"

When switched on, the computer bursts into life with a new and unusual whine; the booting up sequence is faster, but the checking routines still take approximately 40 seconds compared with the usual 60+ seconds from floppy disk. A more realistic comparison is to open a window with a multitude of icons. I used my letters' window with 70 icons on a floppy disk. This normally took 1 minute 41 seconds, but only 14 seconds with the hard drive - 7 times faster! The makers claim up to 450K/s is possible. If you plan to buy your own hard drive separately and fit it yourself, the kit comes with a short, easy-to-follow connection guide and a user-friendly disk formatting program which includes options for fast filing system and Dos partitions on the disk. It is



as easy as formatting a floppy disk! The only word of warning I would give to anybody who intends to take this route is that the drive MUST be an SCSI compatible drive with a 50 pin ribbon connector. There are several types of drive on the market - MFM, RLL, SCSI, ESDI - to mention but a few, so make absolutely certain that you buy the right one!

Other Features

The interface will auto boot with V1.3 DOS and up but this can be suppressed, for games etc., by holding down the left mouse button on start up. The interface will support up to 6 SCSI drives and there is an optional external connector for the SCSI bus, although when I asked Trilogic about that they were a little vague about it. If you are considering an upgrade to a 2000, this is definitely the drive for you as the interface unplugs

"I think this is the first package seriously to challenge the A590 in value for money."

"The kit comes with a short, easy-to-follow connection guide and a user-friendly disk formatting program"

from the box to become a 2000 compatible card.

The interface is non-DMA which avoids the occasional DMA problem. There will be a 4 and 8 meg expansion

units available soon but as yet no price has been announced.

In conclusion, I think this is the first package seriously to challenge the A590 in value for money. The 48 Meg Segate supplied has run faultlessly with my Amiga and 3 other floppy drives. The only small criticism I would make is that the drive was a little noisy and that the keyboard had not been set for use in this country. You can chose a quieter drive and fit small soft rubber mounts between it and the case. I am quite sure the people at Trilogic can alter the startup routine to set the GB keyboard, so making the Dataflyer even more recommendable.

Product: DataFlyer 500 (Amiga 500)

Price £129.99 (interface kit) £349.99 (complete 48M)

Product: DataFlyer 2000 (Amiga 2000)

Price £79.99

NB the prices quoted were a special offer.

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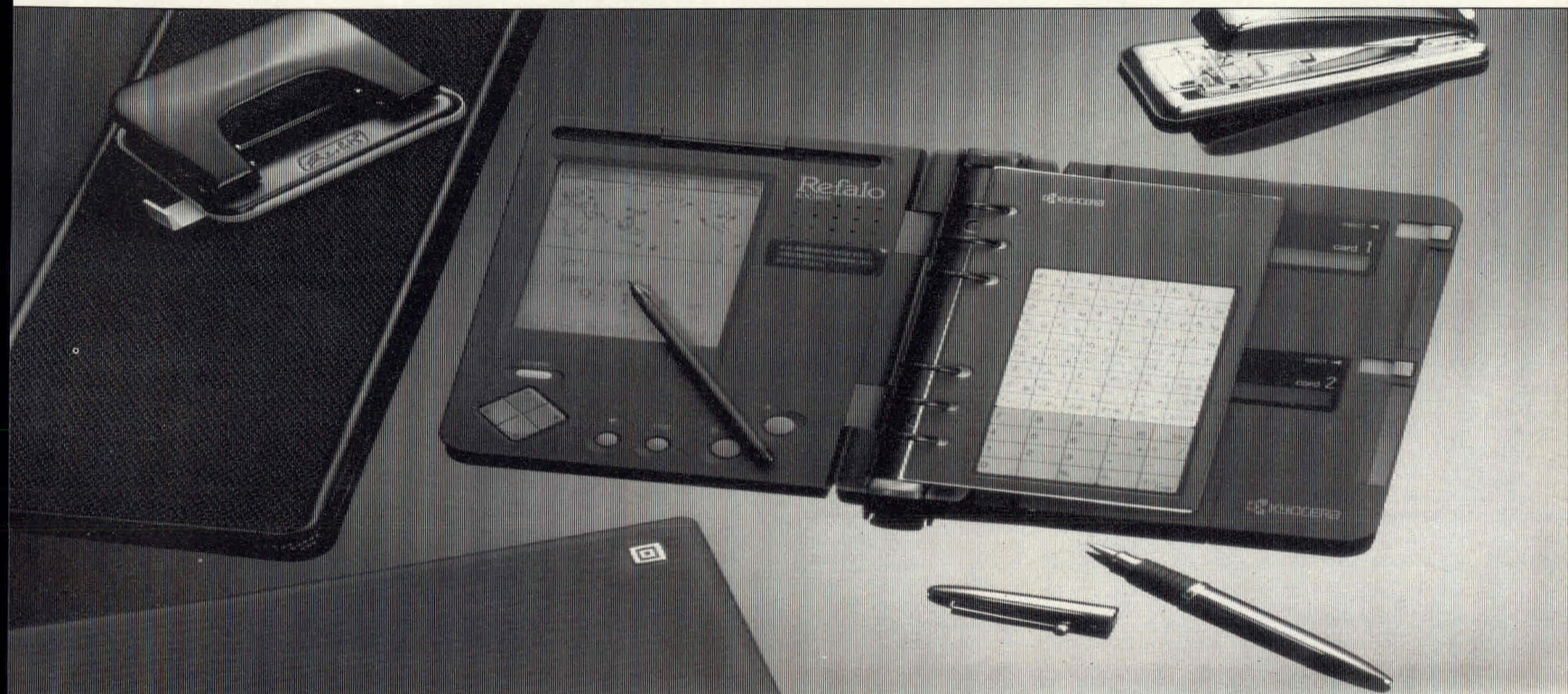
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Refalo

The File Computer

TEST DRIVE



There are always little gems hidden away at trade shows and the recent Which Computer? show was no different. Upstairs on Kyocera's stand was a neat little wolf of a computer in sheep's clothing.

Called Refalo, and looking like an innocent if rather chunky Filofax, this .65 kg innovative machine packed 32 patents into its tiny body. But what a body! It was both a paper-based personal organiser and a very, very clever computer with many unique features.

The heart of the Refalo is its 7cm to 9.5cm touch sensitive screen. Linked to hand-written character recognition software, this means that the tyranny of the keyboard can now be broken as commands for DOS type programs can be entered without recourse to a keyboard. But unlike most touch sensitive displays, this one has a very high resolution. A small stylus is housed above it and by using this, Windows-like graphically based programs can be controlled. Using a special chip deposited on glass, the

Steve Homer finds a neat new computing idea.

stylus can match to any one of the display's 240 by 320 pixels. It is this precision that allows the machine to recognise hand written letters. (Although the Japanese software on display had real trouble with British handwriting!)

But Refalo is also a fully functional Filofax with a standard sized binder at its heart. Paper can be clipped in here but so can other devices. While you can make do without a keyboard in many circumstances, keyboards are easier to use. So Refalo has a keyboard which is again very novel. Measuring only about 3mm thick, it clips into the binder like a page out of a filofax. Ingeniously it communicates with the cover of the machine, which contains the computer itself, by means of electromagnetic induction between the keyboard and the two centre ring binders. While this appears a clever trick you only see how clever when you discover that other devices will be able to clip into the binder and will be able to communicate at a staggering 96000 baud. So, for example, a fax "page" could be inserted and the page could simply be

plugged into the phone socket and a fax could be sent.

One of its few drawbacks is that Refalo has little internal storage but it has two integrated card storage devices in its back cover which can hold a total of 12 M bytes. A data "page" for the ring binder could also be a possibility.

The Refalo has been on sale in Japan for around nine months. Kyocera, Refalo's manufacturer says it should be on sale later this year priced at under £1,000. This seems very steep as it sells in Japan for only about £500. As it is a product that will really be appreciated by those not used to computing this seems a pity as a whole new group of people could be brought into the computing revolution.

Contact:
Kyocera Electronics (UK) Ltd,
8 Beacontree Plaza, Gillette Way,
Reading RG2 0BP.
Tel: (0734) 311500.

TEST DRIVE

Don't be misled by the relatively low price of the current range of hand-scanners - with a little care and the right sort of material, the results can be outstanding says John Kennedy testing one he puts at the top of the list.

Pandaal Data Scanner

As far as I'm concerned, there's only one thing which separates a worthwhile piece of DTP work from a waste of paper, and that's the artwork. So many times I've seen otherwise perfectly acceptable bulletins and fanzines totally spoilt by the lack of decent pictures.

There is really no excuse for this any more, as images scanners - such as the Pandaal Hand-Scanner - now cost less than a good Desktop Publishing package.

In principle scanners are fairly easy to understand: just roll them over the photograph or drawing and save the resulting IFF file to disk. Then load it into your DTP program or Art package and send to your printing device.

The Pandaal M-105 Hand-Scanner seems to be the best of the current crop of Amiga scanners. Certainly, not many of the competition offer a scanning resolution of 400 DPI (check out the hyperdemo on the scanner on the hyperdisk for a demonstration of the scanning resolution).

The scanner connects to the parallel port of any normal Amiga (that is, all but the idiosyncratic A1000 which needs extra fiddling) via a small mains-powered adapter. Out of the box, it takes about five minutes to get scanning, which just leaves time to wish the Amiga came with about six parallel interfaces so you didn't have to keep disconnecting the printer, the sampler, the video-digitiser etc etc.

Load the scanning software (or copy it onto your harddisk) and then pick something to scan. Workbench 2.0 users (all three of us) will not experience any problems with the software.

There are four scanning resolutions to choose from (100 to 400 Dots Per Inch) and four modes of operation. In 'text' mode, no grey scales are produced but in the other three 'photo' modes the scanned image pops up in several differing dither sizes. Which mode you use depends on the work you're scanning and how you're going to output it. The remaining controls are a simple light-dark control and an ergonomically designed, pleasing to the thumb, easy to operate switch which you press when scanning.

It's all so easy. If you work a mouse,

"The net result is that you can perform all sorts of horrible operations on it without losing detail or getting jaggies"

you can work the hand scanner. If you don't think you can scan in a straight line (a new form of drink/drive test?) use the supplied ruler to help guide your arm movements.

Any glitches, such as those produced when scanning in 400DPI mode, can be removed by using the software's zoom editing facility. The 400DPI glitches are (apparently) a result of the Amiga not being able to read the parallel port fast enough. In practice, the glitches are easily fixed. Anyway, unless you are in the habit of scanning large things in extremely fine detail or have vast reserves of RAM, you won't need the 400DPI mode very often. With a 1Mb Amiga you can scan images large enough to be useful, but if you want a larger than usual scan you'll need to select a lower resolution or expand your memory. Only 512K is not particularly useful unless you like scanning stamps for a hobby. The scanner can be used with an unexpanded Amiga, but with memory expansions about #30 there's no reason why it should have to be.

Some reviewers seem to think that scanning entire A4 pages in high resolution mode is something everyone will want to do, and therefore you shouldn't expect to be able to use the resultant high bitmaps in paint packages such as Deluxe Paint. However, in the real world, scans of common objects (faces, company logos etc) are rarely large, and can be manipulated without problems in most paint

packages. Both Art Department Professional and PixMate can produce interesting results by applying blurring operations to scanned images.

Quality

Make no mistake: a hand scanner will not produce full-colour HAM interlace pictures. If you want photographic quality images, you'll have to either get a flat-bed scanner or invest heavily in video grabbing equipment.

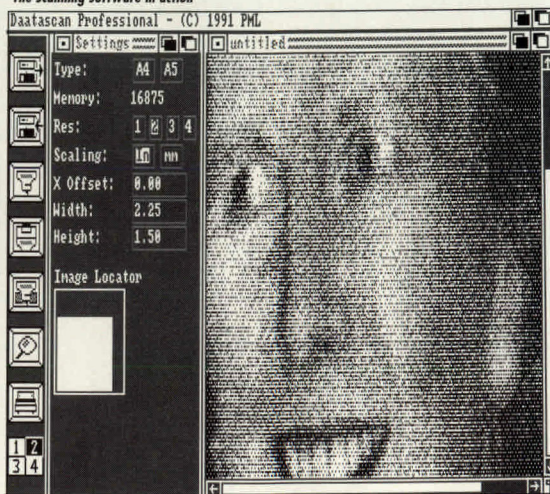
Scanning a colour photograph and expecting professional results is madness, for scanners aren't meant for that sort of thing. They're most at home with a simple black and white image, such as a line drawing or a good high-contrast photograph.

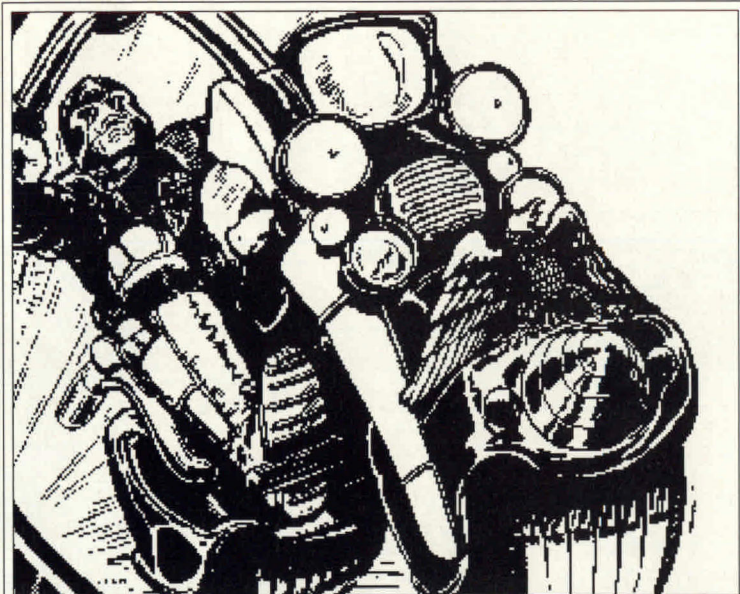
When grey scales come into the picture, the scanner starts to dither. In fact, that's the way it's built. When it's operating in one of its three 'photo modes', it will detect differing shades of light and dark and represent them as patterns of pixels. This effectively means a reduction in the scanning resolution as the pixels are grouped into larger super-pixels to provide the grey scaling information. With photographs, this is quite a desirable state of affairs, especially if the finishing artwork is going to be printed using a laser or matrix printer. As most of these printers use a similar dithering process to approximate shades there is little detail to me lost. However, at the higher end of the DTP market, film out-

Part of a colour photograph, scanned in Photo mode



The scanning software in action





The same image in four different scanning resolutions.

put will show scanners in a poor light. For this sort of work, a colour flat-bed scanner or video-digitiser is the (expensive) solution.

Applications

The obvious application for the hand-scanner is Desktop Publishing. Once scanned, the image can be incorporated into a page directly as an IFF bitmap. The disadvantage to this is that bitmaps are notoriously inflexible. If you enlarge it - say, to fill two columns - the pixels in it will suddenly start looking like pixels. Jaggie attack! Fortunately there are several pieces of software around which will take the scanned image and turn it into 'structured art' (GoldDisk's ProDraw2 and Alternative Image's RaceTrace - to be reviewed in October's *AUI*). This vector form of the original drawing stores a list of points describing the shape, rather than a collection of pixels describing the form. The net result is that you can perform all sorts of horrible operations on it without losing detail or getting jaggies. The mono-

chrome scans from the Pandaal hand-scanner are perfect for this conversion process.

Deluxe Paint fans will also find the scanner great fun, but to be honest they would be better off buying a low-priced video digitiser and a second-hand black and white camera. Although a video system can take forever to set-up, the results are much more suitable for general playing around with an art package than the pictures from the dithering scanner.

Finally, the ultra clean and sharp black and white images obtain from scanning text means the IFFs produced are ideal for image processing experiments. Ever wanted to write a Optical Character Recognition program? Well, now's your chance! Just scan some text and train a multiple layer neural network to recognise it. Better add an 040 to the shopping list...

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"512K is not particularly useful unless you like scanning stamps for a hobby"

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Workbench

...ing a floppy disk from scratch
...easy matter. As someone who's
...n forced to do it many times
...re, John Kennedy offers you
...e words of advice in Part Four
...he series that everyone is
...ning from - he says.

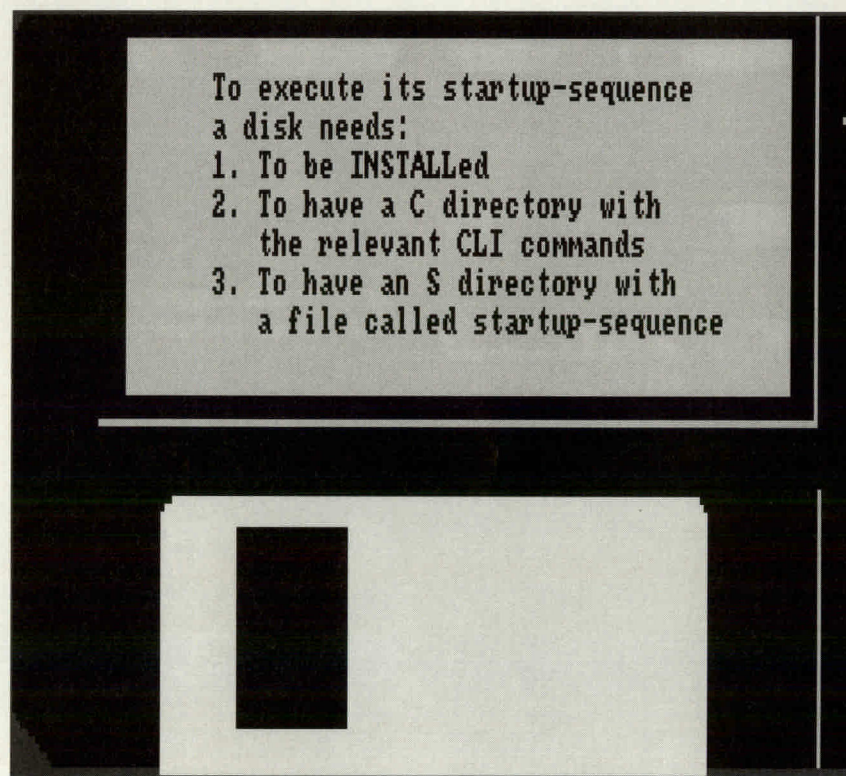
...nd I bet you thought the Amiga
...was a user friendly machine! Go
...on, admit it: all that mouse and
...windows buiness almost had you
...ing that you could actually understand

...n't let it get you down, the worst is almost
...Last month we tackled one of the tricki-
...urts of building yourself a floppy disk -
...ling it. If you remember, before a disk
...ot (i.e. do something when you insert it
...he drive at computer switch-on time)
...al data must be written to it using the
...ALL command. This command is only
...ble from the CLI (under Workbench
...which meant we had to take a detour
...the relative safety of the Workbench.
...e bad news folks, for if you want your
...booting disk to achieve anything more
...cular than a plain blue screen then it's
...o CLI land we must go.

S Directory
...have ever looked at the contents of your
...bench disk with a DIR (directory) com-
...from the CLI, you'll have seen a large
...er of files and directories whizz past
...eyes. (Jargon alert: a directory is CLI-
...for a Workbench drawer. It's not a file
...own right, rather an autonomous area
...disk which can contain files and even
...directories.) One of the more interesting
...ories is the one with the exciting and
...tative name of 's'. Why s? Well, why not. It
...not be descriptive, but it's short. This is
...ews, for you'll be typing it a lot - believe

...of the first things Mr Amiga does when
...iven an Installed disk is to look for the
...ectory. If there isn't one, everything
...s to a halt with that plain CLI-type
...1. If the directory does exist, the Amiga
...or a file inside called 'startup-sequence'.
...to be spelt exactly this way, with a dash
...everything.

*"One of
the more
interesting
directories
is the one
with the
exciting
and
evocative
name of
's'"*



If this file exists, then it's executed. Don't worry - execution isn't as fatal as it sounds, it just means that every line in the file is dealt with as though you had just typed it in yourself from the keyboard. It's the contents of this file that we can tailor to our exact needs.

The C Directory

More directories? 'Fraid so, and this one is just as important as the S directory. All the CLI commands (DIR, ECHO etc.) need to be stored somewhere - for there are no commands 'built-in' to the Amiga - and the designated place is the C directory. If you are building a disk from scratch you'll need to make sure that the C directory and its commands (at least the ones you'll need) are there too.

Preparing the Floppy

Before we can start to create our startup sequences, we'll need to copy all the commands we're likely to need onto the disk. This task is made a heck of a lot easier if you have two floppy drives. If you only have one drive try and borrow one or risk being driven loopy by the disk swapping.

Step 1. Boot from your standard Workbench disk.

Step 2. Format and Install your new floppy disk. If you don't know how to format a floppy disk by now then I'm wasting my breath and should have been a pig farmer. From now on I'm going to assume that the new disk is called BRIAN. Obviously you don't like the name BRIAN you can change it to be something else.

Step 3. Copy the C directory from the standard Workbench disk to the floppy disk. This is done by opening the CLI window and typing a command like: COPY c BRIAN:c ALL

This command will create a new C directory on the blank floppy if one does not already exist.

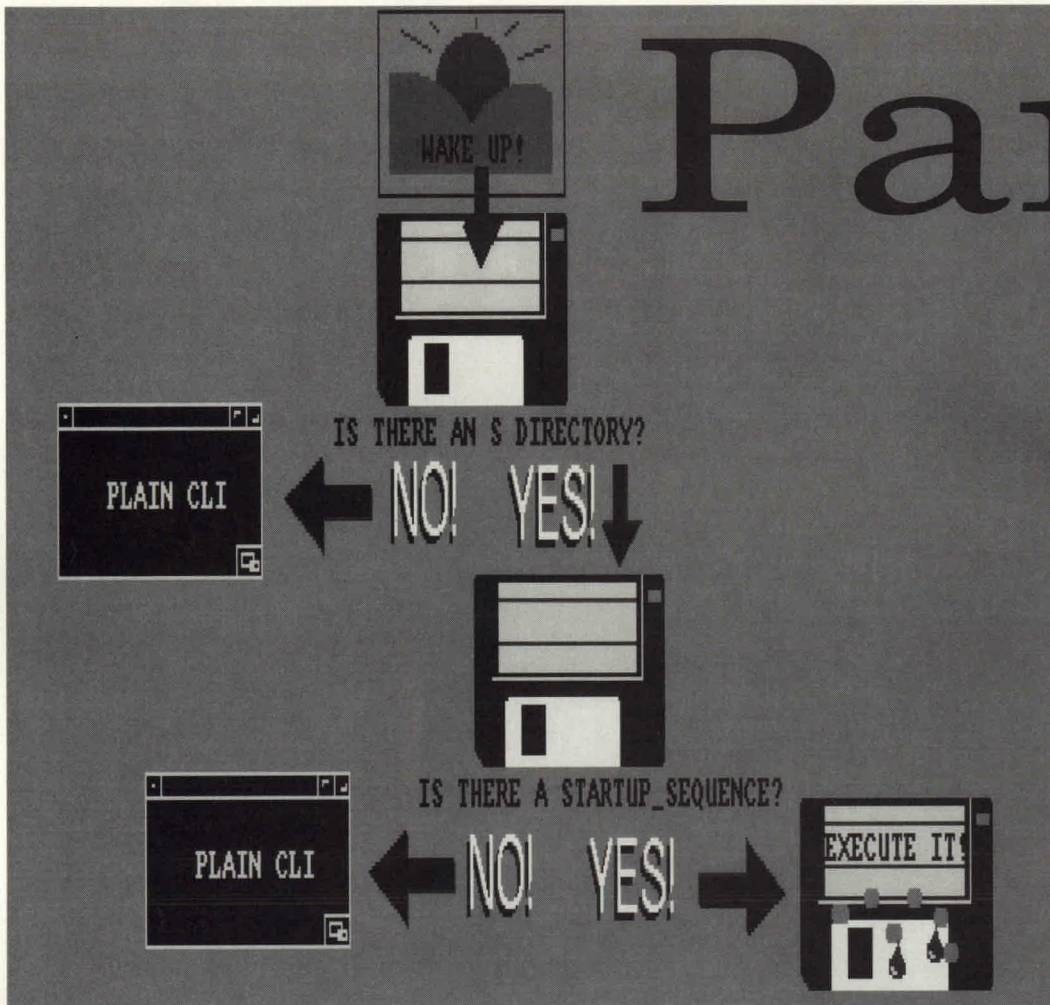
Step 4. There is no Step 4.

Step 5. Make a new 's' directory on the floppy. Type: MAKEDIR BRIAN:S into a CLI window in the Workbench.

An example startup-sequence
To make our startup-sequence we're...

Part 4

"Execution isn't as fatal as it sounds, it just means that every line in the file is dealt with as though you had just typed it in yourself from the keyboard"



envoke the CLI's user-friendly text editor. (Quick quiz: at least one part of that previous statement was incorrect. Can you tell which?)

Get back to the good old CLI, and type `ED BRIAN:s/startup-sequence`, which runs the text editor and tells it to edit the file called 'startup-sequence' located in the 's' directory on the floppy disk Brian. The fact that the file does not yet exist won't throw ED, which will instead create the file from scratch.

Now type in the following:

```
echo "Greetings, I'm Brian!"
echo "Now executing your startup-sequence"
echo
dir
```

And then press `ESC` followed by 'x'. This should save the new file to Brian. You can check by typing `TYPE BRIAN:s/startup-sequence` and examining what pops up on screen. If it is not exactly the same, either run ED again to try and correct the mistakes or delete the startup-sequence and start again.

Once you're happy that the file is correct and saved, it's time to give it a test. And how do we do that? Simple - reset your Amiga and

stick Brian into the drive.

What should happen is this: after a few seconds the screen will go that lovely blue colour and some copyright messages will appear. Then the familiar and patronising text we entered into the startup-sequence will appear, followed by a directory of the disk's contents. If this happens, then congratulations - it's worked! If not, never mind. The human brain is a wonderful thing and you'll soon discover what's gone wrong.

Using the Startup-sequence

The startup-sequence really starts to become useful if you have a particularly program which will automatically run whenever you pop the disk into the drive. This is easily achieved by copying the program across to the new disk (either with the CLI's copy command or by dragging the icons on the Workbench) and then altering the startup-sequence. For example, if your favourite program was called 'Brian-Invaders' then you would use a startup-sequence like this:

```
echo "Now running Brian Invaders..."
Brian-invaders
```

"Step 4. There is no Step 4."

Possible Problems

Q. When I try to test my disk, nothing seems to happen. The picture of a hand won't go away.

A. Sigh. This is because the disk has not been installed. As explained last month, a disk needs special information written to it before it can boot on its own.

Q. When I use ED, I can't get the file saved to disk.

A. Are you using `ESC` and then `X` to quit from ED? Has the disk got its Write Protect tab set?

Q. I've got the disk installed and startup file saved, but the Amiga seems to ignore it. What's wrong?

A. Have you spelt 'startup-sequence' correctly? Make sure you have a dash and not an underscore character. Is the startup-sequence in the 's' directory?

Q. I was wondering, if the 's' and 'c' directories are just like drawers, how come there are no icons for them on the Workbench?

A. Neither the 's' nor the 'c' directories have associated files called 'info'. For example, the System drawer does have a file called System.info, which means that you can see the system drawer on the Workbench. If you deleted the file 'System.info' the drawer would still exist, but you would not be able to access its contents from the Workbench. The 's' and 'c' directories do not need 'info' files, since they can only be made use of from the CLI.

ADAPT

680x0 Assembler

If you think when you've seen one assembler, you've seen them all, you just might miss out on the shape of things to come. John Kennedy checks out a modest little number from Lake Forest Logic.



After writing several programs with HiSoft's DevPac package, you could be forgiven for thinking that any new assembler would have been almost artificially intelligent and capable of automatic code generation to deserve a mention in the hallowed pages of *AUI*.

I must admit to thinking these very thoughts when Adapt landed in my lap. "Oh good, another assembler. Just what I need." was said with a shade of sarcasm.

Thankfully, I persevered and discovered that similar to a certain diminutive female of my acquaintance, good things come in small packages. Inside the tiny box was a single disk and some brief - well, perhaps "concentrated" is a better word - documentation.

Adapt has several claims to Amiga fame. The first is that not only does it support the standard 68000 processor, but it also generates code for the rest of the 680x0 family and their associated maths co-processors. This means that the standard mnemonics have been tidied up a little, but this will cause no concern to 68000 users. The ability to produce code for the 68010, 68020, 68030, 68881/2 and 68851 is something I've yet to come across on other assemblers, and with the cost of speed-up boards almost falling into even my price bracket, Adapt has arrived in the nick of time.

There are three other reasons for Adapt being a Good Thing: Hlink, PMA and HPROF. The first of these extra programs is a linker, which does all a good linker ought to and a bit more. You need a linker to convert the assembler's object code into a program you can run. It works by clarifying any cross references between different source code files and the Amiga libraries. The near-standard Blink (an improved version of the original Alink) is the old favourite, but there are good reasons for using Adapt's Hlink

"There are three other reasons for Adapt being a Good Thing: Hlink, PMA and HPROF."

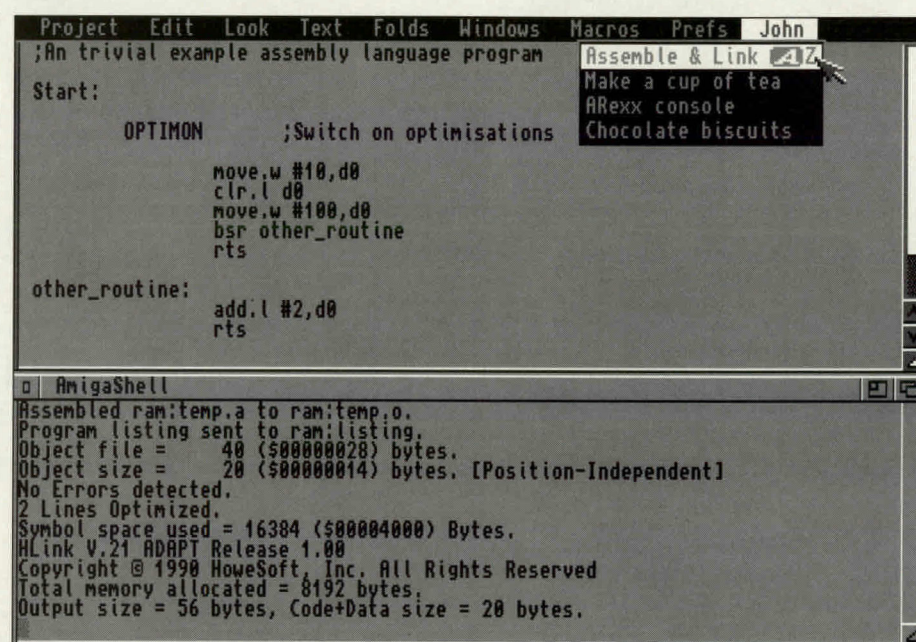


Figure 1 Text editor and Adapt in perfect harmony. From the author's customized pull-down menu, the text is saved, assembled and linked.

instead, as we'll see later.

The two other programs are for dealing with your finished code. The first is a performance monitor which times your program and so helps you to find any speed bottlenecks: useful for fine-tuning your latest Mandelbrot program. The second program, the Program Module Analyzer, will analyse your assembled and linked code to provide useful 'after the event' details.

HX68, the pet name of the assembler, conforms to the standards expected in these enlightened days. Not only does it fully support conditional assembly and macros (it would have been in trouble if it didn't), but it also does some code optimisation into the bargain. Previously, if you wanted your code optimised you had to use the rather fearsome ArgAsm package from Jez Sans and crew. If you needed 680x0 code AND optimisations

then there was a new mnemonic to learn: TL = tough luck. The optimisation routines do such cunning things as changing CLR's into MOVE's, altering suitable ADD's into ADD.Q's and improving on the programmers choice of BSR and JSR. The optimisations can all be individually controlled just in case there is a good reason for writing code in a specific way.

In Use

Adapt does not include any form of text editor: it doesn't need to, for both HX68 and Hlink support ARexx which gives them a major advantage over the competition. With a tiny ARexx program, any ARexx text editor can assemble and link programs from a customised pull-down menu.

To achieve this using TurboText, I run both HX68 and Hlink from a CLI with a 'resident' option. This loads them


```

1 0000: ;An trivial example assembly language program
2 0000:
3 0000: Start:
4 0000:
5 0000: OPTIMON ;Switch on optimisation
6 0000:
7 0000:303C000A move.w #10,d0
! 8 0004:7000 clr.l d0
9 0006:303C0064 move.w #100,d0
* 10 000A:61000004 bsr other_routine
**** MESSAGE 6: Branch could have been short.
11 000E:4E75 rts
12 0010:
13 0010: other_routine:
! 14 0010:5480 add.l #2,d0
15 0012:4E75 rts
16 0014:
17 0014:
18 0014:

Assembled ram:temp.a to ram:temp.o.
Object file = 40 ($00000028) bytes.
Object size = 20 ($00000014) bytes. [Position-Independent]
No Errors detected.
2 Lines Optimized.
Symbol space used = 16384 ($00004000) Bytes.

```

Figure 2 This is the listing output file produced by HX68 in verbose mode. The exclamation marks denote code which has been optimised.

Listing 1

```

/**
** $VER: Envoke ADAPT hx68
** assembler & linker package
**
**/
SaveFileAs NOICON
"ram:temp.a"
address hx68 "ram:temp.a -o
ram:temp.o -l "ram:listing"-
cyrb"
address hlink "from ram:temp.o
to ram:temp"

```

into memory, where they remain in a completely invisible form. I then create an ARexx macro (such as listing 1) and patch it into the startup definitions of my ARexx-friendly text editor.

After that I can forget about them, and get on with the task of developing my program. This is, after all, what good assemblers are all about. The best assembler is the one you don't notice working. It just gets on with it. Rest assured that HX68 got on with it.

If you aren't using ARexx, you can still use both the assembler and linker directly from the CLI. With an editor such as Cygnus Ed or TurboText, the multitasking features of the Amiga makes developing programs as easy as pressing Amiga-M and Amiga-N.

Post Traumatic Code Examination

The 'extra' programs which come in the Adapt box are genuinely useful, and not simply disk fillers. Although a far cry from a decent single-stepping monitor, they are solid tools which you can be sure of using. You can see some of their results in figures 1 to 3. The example source is trivial, but demonstrates the optimisation facilities: for example notice

that the CLR instruction (not an Amiga-friendly one) has been altered. Every line preceded with an exclamation mark in the assembled source listing has been improved in some way.

Who wants it?

Adapt is not for the first-time machine code programmer. The advanced documentation and lack of integral editor ensures that if you have never assembled a program before, then you're asking for trouble if you buy Adapt. The experienced user will find Adapt a dependable software tool. It really comes into its own on an expanded machine: preferably an Amiga 3000. Using it on a 25Mhz 68030 will also speed it up - on a bare 68000 it is slower than DevPac.

Adapt is a professional product, and as such, at the moment it has no competition.

```

AmigaShell
1.Ram Disk:> dh0:c/pma temp ALL
PMA 68030+ Program Module Analyzer V17 ADAPT Release 1.00
Copyright © 1990, HoweSoft, Inc. All Rights Reserved.
* Hunk_Header:
* Table size = 1 hunk.
* First Hunk numbered 0.
* Last Hunk numbered 0.
* Hunk #0 size = 20 bytes [5 longwords]
* Code_Hunk [PUBLIC] #0 Length = 20 bytes [5 longwords]
    move.w #500,D0      ; 8 CYCLES
    moveq  #500,D0      ; 4 CYCLES
    move.w #564,D0      ; 8 CYCLES
    bsr.w  *+506         ; 18 CYCLES
    rts                ; 16 CYCLES
    addq.l #2,D0        ; 8 CYCLES
    rts                ; 16 CYCLES
* 78 Total Cycles
* Hunk_End.
1.Ram Disk:> dh0:c/hprof temp
HProf V09 - by Wesley Howe & Jim Cooper ADAPT Release 1.00
Copyright © 1990, HoweSoft, Inc. All Rights Reserved.

Runtime Profile of "temp"
Run State Hits.. 0 [Out-Of-Hunk Hits = 0]
Ready State Hits 0
Wait State Hits.. 0
Total Hits..... 0
1.Ram Disk:>

```

Figure 3 Using both HPROF and PMA, you can see where the code optimisations have occurred.

What is ARexx and do I need it?

Buried away in a oh-so-cute drawer on the Workbench 2.0 display is a piece of software called ARexx. It alone demonstrates that the Amiga is more advanced than any Mac or PC, for it is a high-level inter-process scripting language.

Who he? Don't worry if the jargon fazes you, the language won't. It's so simple it is almost BASIC, and yet so powerful it can improve nearly any Amiga program you have.

Any ARexx-compatible program has a special 'port' which can accept ARexx messages. These messages come from ARexx programs (more usually called macros) which can be called from completely different programs.

For example, both the Adapt assembler and linker can be made to run in a memory resident way. From the user's point of view they vanish completely. You only know they are there when your text editor sends them a message which says "Hey you, Assembler! I'm talking to you! Assemble this 'ere code for me!"

This means you can tailor your system to you own requirements and fetishes. If you really wanted, you could even drive Adapt from a user-friendly program such as Hyperbook. An WIMP driven assembler? No problem.

A typical ARexx-macro is shown below, but note that this simplified example doesn't take into account any error messages from the Assembler or linker.

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QUAD

Welcome to the machine, my friends. Here's a tricky problem. Imagine you're writing a machine code game and the operating system is on hold. In fact, if your machine code games are anything like mine, the operating system is missing, presumed out to lunch never to return. With no OS, you have to do almost everything yourself, which leads to my question. How to you get the score - which is after all, nothing more than a value kept in a register - onto the screen?

The bad news is that there is no simple way of achieving it, so we're going to have to write some code. The good news is that such code is not too complicated and even better, once you've written it you can forget all about it and only call it when you need a number on the screen, and not just for printing scores.

Last month we looked a rather unsubtle method of getting information onto the screen - blasting it there with the blitter. This time we'll give the blitter a miss to avoid complicating the matter with lots of hardware register values. Once you've sussed out how the code works you'll be able to re-write it to make use of the blitter and so obtain some rather splendid results.

Actually doing it

To summarize, here's what we want: a routine to take a number held in register D0, and print it to the screen in the form of a five digit decimal number. As with all programming projects, the first thing you should do is to break the overall requirement down into smaller and hence more manageable tasks. In this case, the first task is to print a single, individual digit, such as a '1' or a '6' and the second

Non-hacker's beware: this month, the **QU**ick And **DIR**ty low down on getting numbers out of registers and into screen bitmaps. *Ouch!*

"If your machine code games are anything like mine, the operating system is missing, presumed out to lunch."

task is to separate the contents of D0 into five such individual digits.

Coding the first task is easy. Simply store an entire character set in memory, then find the data for the chosen digit and copy it onto the screen, line by line. Easy, peasy lemon squeezy. Slight caveat - remember to make sure you know whether you're in low resolution (40 bytes between screen lines) or high resolution (80 bytes between screen lines). In the source examples, I assume a low resolution screen.

Converting the second task into code is a tad more tricky and needs some primary school level arithmetic, so ask your younger brother if you need help. Here's my way of doing it, which makes use of the multiply and divide routines in the M68000's instruction set.

The Recipe

Take the number we want to display, and divide it by 10,000. Obviously, this tells us how many ten thousands are in the number - or to put it another way, it tells us what the first digit of our number is. We can therefore display this digit with a call to our single printing routine. Next we remove all the ten thousands from the number by multiplying it by 10,000 again and then subtracting it from the original.

Now take this number, and divide it by 1000. This tells us what the second digit is, and so we print it. We then remove the thousands from the number, move onto the hundreds and repeat the

process. Eventually we will have discovered what all five digits in the number are, passing each in turn to the routine that prints single digits.

"Coding the first task is easy. Simply store an entire character set in memory, then find the data for the chosen digit and copy it onto the screen, line by line."

There - I told you it was simple. The source code for this routine is included on the Hyperdisk, as is the binary code for the character set.

And that, more or less, is all there is to it. Once you have the routine working, you'll be able to adapt it to suit your own needs. For example, you should be able to incorporate the blitter into the printing of the digits by looking at last month's Quad. The result of this exercise would be an increase in speed and also the prospect of some whoppingly huge characters. And what do we all know has whoppingly huge characters? Do I hear scrolling messages anyone? Yes, you could be right. Adapting the routine to print text is quite a simple matter and only requires the junking of most of the maths routines. Now there's an idea - how about a QUAD on DIY scrolling messages... any takers?

USER PORT

Norman Stone, custodian of ICPUG's Fish Disk Library, paddles out into the deepening (or is it widening?) Fish pool of the Amiga's most famous P.D. source.

Since the beginning of this year Fred Fish has again surpassed himself with the amount of good P.D. programs he has supplied to the public through his Fish library. Of course, thanks must also go to the authors of these excellent programs. At the beginning of 1991 the number of Fish disks had reached 440. It continues to rise.

It is worth taking a brief look at some of the programs on the disks up to 462, to whet your appetite for the remarkable Fish P.D. disks.

There are usually several programs on the Fish disks, and a brief description of the programs can be made here.

Disk 442:

Toolmanager: This program is for WorkBench.2.0 owners. You can add your own programs to the tool menu with this program.

Disk 443:

DICE: Integrated C environment C compiler, assembler, linker etc.

Disk 444:

Chinachallenge: A Chinese tile game similar to Shanghai "If you like Shanghai puzzles then this is worth a look at".

ElitieBBS: An on-line Message and File handler support for Xmodem etc.

MissileCmd: A missile command game, features include hires interlace screen. (Featured on AUI Coverdisk August).

Regexplib: Shared library that implements regular expression pattern matching.

UltraF-4: Demo version of a graphic based disk format program, can format up to four at a time.

Disk 445:

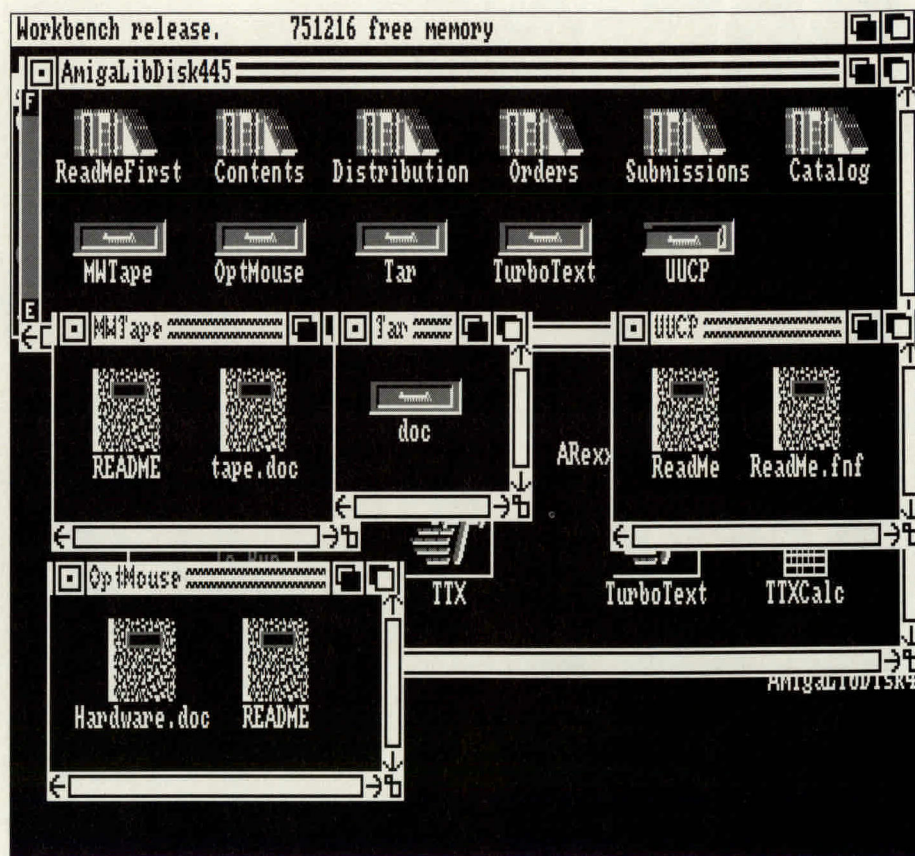
MWtape: A tape handler which uses scsi.device to implement serial access to a typical tape streaming device.

Optmouse: A program which allows you to use a system M3 serial mouse with the Amiga, useful as an example of how to fake mouse movements.

Tar: A port handler of a UNIX tar clone.

Turbotext: A Demo copy of a new text editor for the Amiga.

Includes Arexx interface, recorded macro's calculator, but it does not save or allow printing "That's the catch".



GOING

Disk 446:

CannonBj: Printer Driver for the Canon BJ Printers.

Gameport: Toolkit with linktime and shared libraries that allows access to the gameport device.

Input: Toolkit with link time and shared libraries allows easy access to input device.

Pointerlib: disk based shared shared library which provides programmers easy access to custom pointers.

POST: An excellent postscript interpreter supports type 1 & type 3 fonts, screen, file and printer output.

Disk 447:

Amiback: Demo of a new backup utility.

Backpac: Demo version of backup program.

DFC: Disk format and copy program.

Flashback: Demo of new backup utility.

Sman: A Mandelbrot Generation game.

Tcl: Port of tool command language.

Disk 448:

Amigapet: Cute screen hack.

Fifodev: Fifo is like PIPE but it is based on Fifo.library rather than its own implementation.

Mkid: A program identifier database package that provides a logical extension

to ctags.

Nightmare: A screen hack to scare you. On-time: Holds a task until a given time.

PictoANSI: Converts a one bit plane 320x200 IFF picture to a file that displays it on any ANSI Compatible terminal.

Solitairex: card game.

St2Amiga: Convert Atari Executable to Amiga Executables.

Swish: Screen hack.

Disk 449:

Globulus: Demo of arcade game.

Handshake: VT53/VT100/VT102/VT220 Terminal emulator.

Iff2ANSI: Turns any two colour low-res IFF into ANSI Text.

Shazam: Picture viewer for Dynamic hires.

Wondersound: Harmonic instrument design tool.

Disk 450:

AmyVswalker: Cute Animation from Eric Schwartz, this one has Amy the squirrel trying to get the wrench from the "Walker" from the Empire strikes back. "This is a must and if you can see the other Animations he has done on disks 413/414/417/418 you will be stunned, also pogo on 423. These

animations are the best I have seen “.

Minrexx: Simple Arexx interface.

Tabu: Quarter tape backup utility.

UUCP: Update.

Disk 451:

Liner: Shareware creates outlines for notes or export to other programs.

Convert: Convert 39 image format to 24 bit Iff.

Prodrivers: Printer drivers for IBM 4201 & 4202.

RCS: Revision control system.

RRamdisk: Recoverable ram disk supports up to 32 units.

Snoopdos: A utility for monitoring Amigados calls.

Disk 452:

Budget: Program to help with managing personal finances.

Flodemo: Floorplan construction demo.

Imagelab: Program which performs image processing on IFF pictures.

Mandelpaug: A version of mandfxp with complete on line help.

Disk 453:

Amigatractraction: Concentration game for the Amiga you must locate matching tiles.

Lemmings: Demo version of the game.

Stillstore: Program designed for free-lance, corporate, and broadcast television.

Vortex: Universal Accented character converter for Amiga, IBM-PC.

Disk 455:

Anguscopy: Diskcopy program with intuition interface.

ConvmacF: Converts Mac type 1 adobe fonts to usable font on Amiga.

Memmon: Memory monitor.

Vlt: vt100 emulator.

Disk 456:

Cheat: Compilation of Cheats, Hints etc.

Cmanual: Part 1 & 2 of a complete C. Manual (part 3 & 4 on Disk 457).

Disk 457:

Cmanual: Part 3 & 4 to C manual on Disk 456 “This unpacks on to 4 disks this is an update to disk 337, I have unpacked 337 and it is a very good C manual, so with the extra data on this disk it is a must for all budding C programmers and also professional users”.

Line: Shell written to enhance the bare bones CLI.

Quickreg: An ask utility to replace ask command from Amigados.

Disk 459:

Conquest: Lore of Conquest is a war game similar in concept to the board game “RISK”.

Rxgen: An Arexx library that allows you to call any function from Amiga libraries from an Arexx program.

Xprmodem: An Amiga shared library which provides Zmodem file transfer to any XPR-compatible communication program.

Zoom: A fast and efficient disk archiving utility based on data compression/decompression algorithms used by 1h.library.

Disk 460:

Jmenu: This program allows an Amigados script to display a menu wait for the user to make a selection with the mouse or keyboard then return selection back to the script through an environment variable.

Nethack: A screen oriented game where your goal is to grab as much treasure as you can, retrieve the amulet of Yendor then escape the mazes of menace Alive.

Shadowmaker: Demo of a font shadow maker.

Disk 461:

Dfrags: “No not fraggle rock but a Disk fragmentation reporting utility, for both floppy and hard disk.”

Diskprint: Prints labels for 3.5 disks, three different sizes, default file, etc> update to Disk 441 “One of the items you might need if you do start to acquire Fish disks”.

Logic: Game that is reminiscent of “Life” (The game not the real thing - or is the real thing just a game?)

Mandanim: Mandelboot animation program, allows you to generate a series of lo-res 16 colour pictures.

Newlist: Powerful list replacement, supports many features, sorts, character filters, case sensitivity.

Sball: Game using the joystick to control a bouncing ball.

Tdraw: Easy to use window title bar pattern editor.

Tron: “No need to explain this great game” (And if you haven’t seen the movie, it’s on video and still a wonder!)

Disk 462:

Cathedisk: Improves floppy disk throughput by caching entire tracks of data.

Disterm: The dissidents telecommunication program. phone directory requester, autodial.

Humartia: Arcade game, each player controls a jet and must destroy opponent’s Jet.

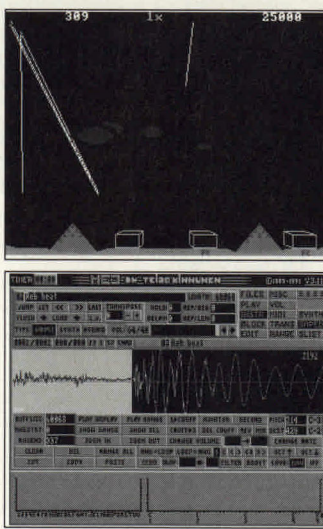
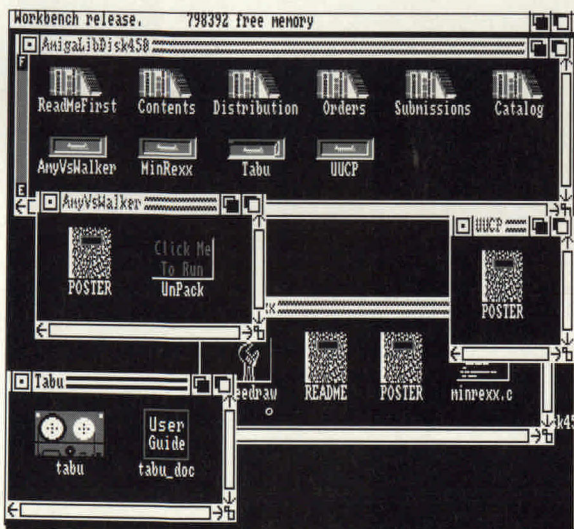
Sealance: Game based on a trident submarine simulator.

Up&Down: Object of this game is to get four chips in a row, across, down, diagonally “You all know this game”.

All these Fish disks can be obtained through ICPUG.

More to come next month!

FISHING!



Projmot: A projectile motion plotter.

Quick: Utility program for hard drive users, eliminates frustration of launching programs on the Amiga.

Disk 454:

Decigel: Software fix that use instructions on the 68010/020/030.

Enforcer: Uses MMU to build a shroud of protection over anything that is not legal memory.

Redaktu: Postscript program runs on pixelscript to edit postscript programs.

Disk 458:

Atcopy: Copy files from Amiga to PC side with bridgeboard. Csh: Csh like Shell.

Gifmachine: Converts compuserve GIF image files to IFF SHAM.

Texify: Package of Arexx scripts for CygnusEd users.

Texify: Package of Arexx scripts for CygnusEd users, allows total control of Amigatex from within CED.

Amidock: Amiga version of the NEXT’S dock but more versatile.

Creating Run-Time

Anyone who has programmed the Amiga will be familiar with the use of run-time libraries. These are files suffixed 'library' in the 'lib' directory on the system disk. The most familiar libraries are 'graphics.library', 'exec.library' and 'dos.library' containing the graphics, Exec kernel and AmigaDOS routines. The run-time library lies at the heart of the Amiga's 'soft' architecture.

As part of a larger project, I wanted to build a library in which to maintain my most commonly used routines. These routines could then be accessed from my programs in the Amiga multi-tasking system, rather than keep separate copies of the routines in execution modules. This article gives a detailed description of how a run-time library can be constructed and added to the Amiga system.

What is a Run-Time Library?

In a soft machine architecture, such as the Amiga, system routines do not reside at any absolute addresses. Instead, a soft architecture relies as little as possible on absolute addresses. In such an environment, system routines and jump tables do not always have the same addresses, and are consequently loaded into memory wherever there is room for them when they are needed. This results in a flexible system with efficient use of memory, which is particularly important in a multi-tasking system such as the Amiga. Since there aren't any fixed addresses, then 'upgrading' libraries is easily achieved. Figure 1 illustrates the block structure of a library. The library comprises the library structure and data areas, together with a table of jump vectors to the library routines. The library routines themselves do not form part of the library, but are loaded wherever there is space. The vectors are usually 6 bytes wide.

A pointer to the library node obtained when initialising a library, represents the library base address. The library data area extends to positive displacements from it. The library node or structure is defined as follows:

```
struct Library {
    struct Node lib_Node;
    UBYTE lib_Flags;
    UBYTE lib_pad;
    UWORD lib_NegSize;
    UWORD lib_PosSize;
    UWORD lib_Version;
    UWORD lib_Revision;
    APTR lib_IdString;
    ULONG lib_Sum;
    UWORD lib_OpenCnt;
};
```

where:
lib_Node contains the name of a Node sub-structure;
lib_Name parameter points to the name of the library;
lib_Pri determines where in the library list the library sits;

Steve Simpson shows how programmers can create their own Amiga library.

'Library' is used in two different contexts in the Amiga programming environment: A collection of routines in Kickstart memory or loaded from disk and accessed via jump tables in RAM. Scanned libraries contain standard definitions and routines and are used at link time. They also contain interface routines to run-time library routines.

lib_Type is NT_LIBRARY to show that the node is a library node;
lib_Flags The library flags. Possible values are:
LIBF_SUMMING indicating that a task is currently running a checksum on the library;
LIBF_CHANGED indicates that one or more entries in the vector table have been changed;
LIBF_SUMUSED indicates that the library designer wants a checksum fault to cause a system panic (crash!)
lib_NegSize contains the number of bytes before the library structure itself. This yields the number of entries in the vector table.
lib_PosSize contains the number of bytes after the library structure. This is the data area.
lib_Version Contains the version number of the library.
lib_Revision Contains the revision number of the library.
lib_IdString Pointer to a NULL-terminated text string which identifies the library.
lib_Sum Contains the current value of the checksum for the library.
lib_OpenCnt Each time the library is opened this parameter is incremented. It is decremented each time the library is closed.

The Library structure is defined in the C header file 'exec/libraries.h'.

By way of an example, we can take a look at the 'graphics.library'. This library's jump table starts in the following way:

| offsets | | | |
|--------------|-----|------------|---------|
| FFC4 (-60) | JMP | \$00FC7FF8 | Text |
| FFCA (-54) | JMP | \$00FC7F98 | |
| TextLength | | | |
| FFD0 (-48) | JMP | \$00FC7CC0 | |
| ClearScreen | | | |
| FFD6 (-42) | JMP | \$00FC7C88 | |
| ClearEOL | | | |
| FFDC (-36) | JMP | \$00FC7D24 | |
| BlitTemplate | | | |
| FFE2 (-30) | JMP | \$00FC746A | |
| BlitBitMap | | | |
| FFE8 (-24) | JMP | \$00FC6CD4 | |
| ExtFunc | | | |
| FFEE (-18) | JMP | \$00FC6CD8 | E x - |
| punge | | | |
| FFF4 (-12) | JMP | \$00FC6CD8 | Close |
| FFFA (-6) | JMP | \$00FC6CD4 | Open |
| 0 | | | Library |
| Base Address | | | |

The jump destinations are not constant — they reflect destinations at which AmigaDOS

has loaded the library into RAM. However, the order of the entries in the jump table does remain constant. The jump table entries build downwards in memory from the 'library base address', i.e. towards negative offsets. Thus by knowing the library base address for 'graphics.library' (called: GfxBase), we can get to any jump table entry by indirect addressing. If register A6 contains GfxBase, then the assembler command:

```
JSR -48(A6)
```

will clear the screen. The offset in assembler is either defined as a constant in an appropriate .i file, or is declared as global in the assembler source file and resolved during linking. A globally defined offset would be prefixed with _LVOClearDisplay and defined to be -48 (\$FFD0), for example:

```
JSR _LVOClearDisplay(A6)
```

The offset constant definition in a .i file would appear as an offset beyond the standard library routines offsets, thus:

```
LIBINIT .....
LIBDEF CLEAREOL
LIBDEF TEXTLENGTH
```

Where LIBINIT defines the standard routine offsets for Open, Close, Expunge and ExtFunc). The routine ClearDisplay would be jumped to by using

```
LINKLIB CLEARDISPLAY,A6
```

in the assembler source code. LINKLIB is a macro and is implemented as follows:

```
MOVE.L A6,{SP}
MOVE.L A2,A6
JSR -48(A6)
MOVE.L {SP},A6
```

The library base address is returned in register D0 from a call to OpenLibrary(). This function scans a list of library names maintained by Exec for the base address of the sought library. The enclosed listings illustrate how you can use both calling systems and how to implement user-defined run-time library routines.

Building a Run-Time Library

The 'ROM Kernel Manual: Libraries and Devices' (RKM) gives the code for an example skeleton library. It does not describe however, how to implement it and make it available to the Amiga system. Listing 1 gives the code for the library 'mylib.library'. The library code is supported by 'libsuff.i' and 'mylib_def.i' include modules, (listings 2 and 3 respectively).

The first instruction in the library sets the D0 register to zero and returns immediately. This is a safeguard just in case someone tried to execute the library.

Libraries Part One

The ROM-tag structure gives the system information about the location of setup routines and data. Its format as a C structure would be:

```
struct Resident {
    UWORD rt_MatchWord;
    struct Resident *rt_MatchTag;
    APTR rt_EndSkip;
    UBYTE rt_Flags;
    UBYTE rt_Version;
    UBYTE rt_Type;
    BYTE rt_Pri;
    char *rt_Name;
    char *rt_IdString;
    APTR rt_Init;
};
```

This structure is found in the C-header file 'exec/resident.h'. Its parameters are:

rt_MatchWord is RTC_MATCHWORD.
rt_MatchTag is a pointer to the next ROM-tag structure.
rt_EndSkip is the address of the library end code.
rt_Flags is either RTF_AUTOINIT or RTF_COLDSTART.
rt_Type is either NT_LIBRARY, NT_DEVICE or NT_RESOURCE.
rt_Pri is the library priority - usually zero. This gives the preferred location in the Exec library list.
rt_Name is a pointer to a NULL-terminated name string.
rt_IdString is a pointer to a NULL-terminated identifier string.
rt_Init is a pointer to the initialisation table for this library.

The library name is a NULL-terminated string, in this example library "mylib.library\0". The IdString is the library's identifier tag and is used in library support and maintenance. It helps to identify different versions of a library, and its format is:

```
'name version.revision (dd mon
yyyy)',<CR>,<LF>,<NULL>
```

eg. "mylib 1.0 (06 May 1988)\015\012\0"

(\015 and \012 are octal equivalents of CR (carriage return) and LF (line feed)). The rt_Init field in the ROM-tag Resident structure points to a table of addresses for initialisation of data and any initialisation routines. This table would have the following C structure:

```
struct Init
{
    ULONG space;
    ULONG funcTable;
    ULONG dataTable;
    ULONG initRoutine;
};
```

where:

space is the total data space size in bytes, required by the library. This is sizeof Library structure + user library data space.
funcTable points at the table of function initialisers or addresses to the library's functions (routines).
dataTable points at a table of data initialisers.
initRoutine points at the routine to run to initialise the library.

These parameters are used as input to the MakeLibrary() library initialisation routine. We discuss how this routine is used later. The label funcTable in listing 1 references the absolute addresses of the routines in the library. These are the routines which will be allocated places in the jump table at negative offsets from the library base pointer. These jump table addresses are usually 6 bytes wide, but 4 and even 2 bytes wide jump table entries can be used depending on how close in memory the library routines are to the library structure. For 4 bytes wide jump table entries for example, the routines must reside within 32k of the library structure. The routines table is terminated with -1L.

If the first long word of the table is -1, then the table entries are relative word displacements (based off of absolute vectors). The table is terminated with -1L.

The code for dataTable in listing 1 is used to initialise the static data structures. In this example we initialise the library structure with various values, but you could use this table to initialise your own data area after allocation with AllocMem(). The format used is the same as that required for input to the InitStruct() routine. This routine clears a memory area except those words whose data and offset values are given in the initialisation table. The macros used for dataTable in listing 1 can be illustrated by their equivalent C structures:

```
byte: struct InitByte {
    UBYTE ib_command;
    UBYTE ib_count;
    UWORD ib_offset;
    BYTE ib_value;
    UBYTE ib_pad;
};
```

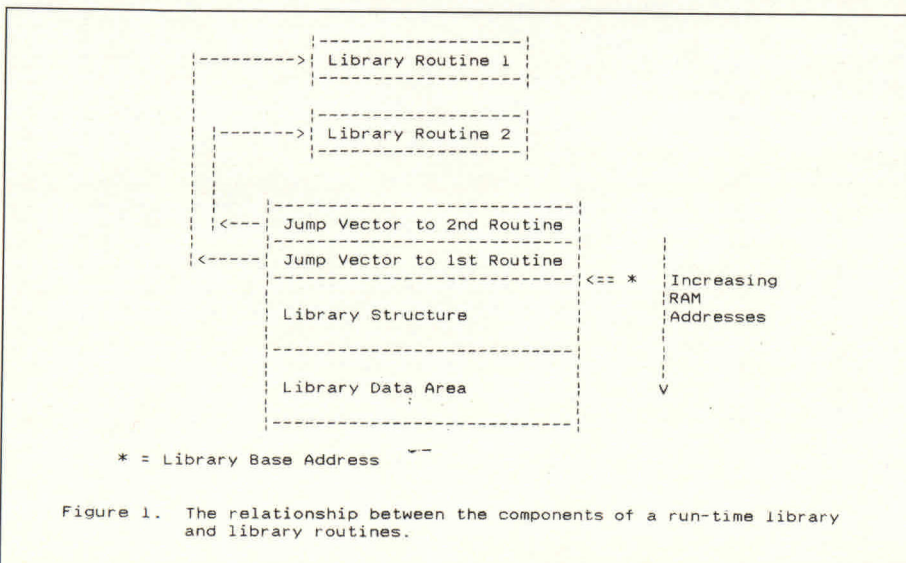
```
word: struct InitWord {
    UBYTE iw_command;
    UBYTE iw_count;
    UWORD iw_offset;
    WORD iw_value;
};
```

```
long: struct InitLong {
    UBYTE il_command;
    UBYTE il_count;
    UWORD il_offset;
    LONG il_value;
};
```

The command format is ddssnnnn, where:
dd is the destination type (and size)
00 - next is destination, nnnn is count
01 - next is destination, nnnn is repeat
10 - destination offset is next byte, nnnn is count
11 - destination offset is next rptr, nnnn is count
ss is the size and location of the source
00 - long, from next two aligned words
01 - word, from next aligned word
10 - byte, from next byte
11 - ERROR - will cause ALERT
nnnn the count or repeat
count - the (number+1) of source items to copy
repeat - the source is copied (number+1) times

The offset is the offset into the data area to be initialised; in listing 1 we are initialising various parameters in the library structure. The dataTable sequence is terminated with 0L.

After MakeLibrary() has allocated the library, initRoutine is called. The user can include custom library specific initialisations in this routine. In the example listing 1, copies of the system base pointer, the library segment pointer and the DOS library base pointer are saved. The DOS library is also opened, otherwise an alert is shown on error.





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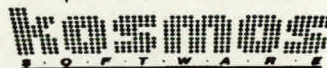
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APD 006 MASTER RACE (arcade quizz designer)
APD 007 QUIZMASTER (arcade quizz)
APD 008 DATABASE MANAGER (great little database)
APD 009 BLACK BELT (karate arcade)
APD 013 DEADLINE (arcade)
APD 016 FRUIT MACHINE (beest available)
XXX 001 PARTY GAMES 2 (adult only please)
PXX 012 MAYFAIR COLLECTION (adults only)
PDX 194 KEFRENS BOOT (make mouse driven menu's)
APD 002 AMOS PAINT

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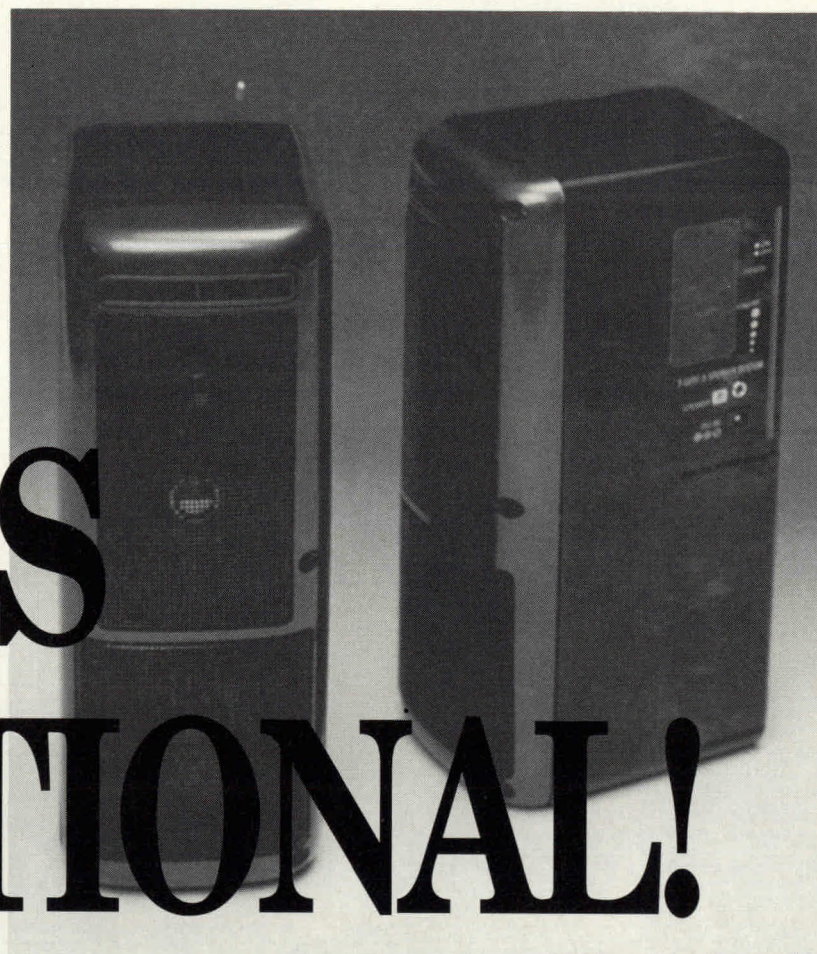
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AUI SPELL

USER PORT

This month I was, perhaps optimistically, hoping to deal with the ADT-style dictionary development in a single installment. For reasons of space however this was not possible so we have split the issues into two parts: This month I'll deal with the layout and the ideas behind building the hash descriptor file. Next month I'll cover the interface code which makes use of it. Without more ado then let's see how the general ideas I talked about last month fit into the AUI-SPELL program framework...

Last month I introduced the concept of a 'circular file' as a vehicle for discussing and developing hash based file access schemes. The results of playing mathematical step searching games with such an arrangement is that two hash-search conditions become recognizable...

1: If any starting point and any fixed step-length are to be used then it turns out that it is only possible to completely search the file if the filesize is a prime number.

2: If the step-length itself is a prime number then the file can be any size that is not a multiple of that step-length.

These rules provide a surprisingly good basis for handling collisions, i.e. for handling situations whereby two keys hash to the same value. The easiest option, and the one we are going to adopt, is to make sure that the filesize is a prime number - because then we know that it will be possible to search the file by stepping around it with ANY fixed step-length.

The secret of success here is to try and make the two hash functions independent and many possibilities present themselves: we have used a mod-limited numerical code based on every letter in the word to compute a starting point, and then for the calculation of the step length used a function which only works on the consonants present in the word. Keys which produce the same starting point should then produce different step-lengths and, because different collision paths will then be followed, the tendency

Paul Overaa discusses the format and generation of a hash descriptor for his spelling checker dictionary...

PART VIII

towards clustering should be reduced.

As far as the spelling checker program is concerned we want to be able to use any number of dictionaries at the same time and, given a word, wish to be able to ask whether a word is present in a particular dictionary using a scheme offered by this type of prototype...

```
BOOL IsPresent(DICTIONARY
*dictionary_p, TEXT *word_p);
```

We do not want the applications program to know anything about the data/access arrangements used to locate words in the dictionaries so in effect we want to produce a dictionary ADT. The dictionary access mechanism is therefore going to be hidden underneath the IsPresent() interface call.

So, hidden inside a separate module will be the code that handles the hash scheme and we have opted for doing all current trials on a module that expects every dictionary to have a hash descriptor table available. It's fair to ask why we have opted for using separate word and descriptor files and there are two reasons: Firstly, we already have the trial dictionary to work with. Secondly because, once the general approach has been sounded out, there will remain the possibility of having more than one descriptor associated with the file. It is, for reasons of time, quite unlikely that I would follow such a path but, in theory at least, it

*"The
secret of
success
here is to
try and
make the
two hash
functions
independent"*

would be possible for each dictionary file to have a separate set of hash descriptors. Just by altering the hash functions these descriptors could conceivably provide access by conventional spelling, by phonetic look-up, or by any other method.

Still, back to the problem at hand: To look for a particular word two values need to be calculated - a hash search starting point which represents a slot in the hash descriptor file, and a step length which is used to step around the descriptor file offsets when it is necessary to make more than one attempt to locate a given word.

Here is the arrangement we have adopted for the hash descriptor file...

| FILE HEADER DETAILS | | | | |
|---------------------|----------|-------------|-------------|--|
| FILE DATA | | | | |
| ID FIELD | FILESIZE | SLOTS FILED | SET | |
| OF N | FILE | OFFSET | POINTERS | |
| N | M | | | |
| 4 bytes | 4 bytes | 4 bytes | N x 4 bytes | |
| table entries | | | | |

The value 0xFFFFFFFF (since it will never be used as an address) has been used as an empty slot marker. For similar reasons all other values greater than 0xFFFFFFFF0 have also been reserved (one of which will find use as a deletion marker at a later stage). What this will mean to any program looking at the descriptor values is this: any value lower than 0xFFFFFFFF0 will indicate a filled slot - in other words it will represent the location of a word in the dictionary file. We have chosen to record these locations as character-count offsets from the start of the dictionary file and calculated them by reading the list of dictionary words and storing the corresponding ANSI C's ftell() values as each word was encountered.

Initializing the table is easy and just involves writing some header details and then filling every slot with our, 'empty slot', 0xFFFFFFFF marker. You will find the full details in the source itself but basically this part of the code takes the following form...

```
CreateTable(table_file_p, HASH_HEADER);
CreateTable(table_file_p, TABLE_SIZE);
CreateTable(table_file_p, INITIAL_WORD_COUNT);
for (i=0; i<TABLE_SIZE; i++)
(CreateTable(table_file_p, MARK_EMPTY);)
```

Now for the hash functions themselves: To calculate the initial place to look when searching the descriptor file the five lowest bits of each character's ASCII code have been used. Here's the function which does all of the work...


```

/* ----- */
ULONG ComputeHashStart(ULONG table_size, TEXT *word_p, ULONG length)
{
    UBYTE byte; ULONG value=0;

    while(length--)
    {
        byte=*(UBYTE *)word_p++; /* produce 5 bit character code */
        value=((value<<5)+byte)%table_size;
    }

    return(value);
}
/* ----- */

```

To calculate the step length (a value between 1 and N-1) this function was modified so that only consonants were used. Basically this involved adding a some switch code to by-pass vowels as they were encountered, like this...

```

/* ----- */
ULONG ComputeHashStep(ULONG table_size, TEXT *word_p, ULONG length)
{
    UBYTE byte; ULONG value=0;

    while(length--)
    {
        byte=*(UBYTE *)word_p++; /* produce 5 bit character code */
        switch(byte)
        {
            case LETTER_A: break;
            case LETTER_E: break;
            case LETTER_I: break;
            case LETTER_O: break;
            case LETTER_U: break;
            default: value=((value<<5)+byte)%(table_size-1); break;
        }
    }

    return(value+1);
}
/* ----- */

```

These, fairly simple, functions do all the hash calculations in a reasonably tidy fashion and the overall format of the descriptor file makes the descriptor read/write routines equally straightforward: All descriptor file entries are the same size (4 bytes) - the table reading routine, for instance, takes the computed hash slot 'location', multiplies it by four, and then use that value as the fseek() position for reading a four byte descriptor value...

```

/* ----- */
ULONG ReadTable(FILE *table_file_p, ULONG position)
{
    UBYTE i; ULONG value=0;

    fseek(table_file_p, position*4, 0);

    value=fgetc(table_file_p); for (i=1; i<sizeof(ULONG); i++) {
        value=(value<<8)+fgetc(table_file_p);
    }

    return (value);
}
/* ----- */

```

Making the Descriptor

You will find the full source code for the descriptor creation program on the cover disk together with a runnable version of the program. What you will need to do in readiness for next month is to create the descriptor file for the dictionary given on the August AUI cover disk. One word of warning - generation programs like this, when working with relatively large files, obviously make a lot of effectively random disk accesses during the time that they are placing data into the table. This descriptor generation is best done completely in RAM - it saves

an awful lot of time and also prevents undue disk-drive wear.

You should be able to copy the make_descriptor program and the dictionary into ram and still have room for creating the descriptor file in the ram disk. Open a CLI/Shell window, copy the files just mentioned to ram and then run the make_descriptor program by typing...

```
ram:make_descriptor ram:dictionary_descriptor ram:dictionary
```

If due to lack of ram space, this cannot be done just make sure that the descriptor file itself gets generated in ram. In other words have the dictionary and the make_descriptor program on a disk in say drive df0 and type...

```
df0:make_descriptor ram:dictionary_descriptor df0:dictionary
```

Either way this program takes some time to run (so don't be too impatient) but the end result is that you will end up with the dictionary_descriptor file which can be copied back to the disk being used to store these AUI-SPELL routines.

Some Results

Despite the fact that no allowance has been made for the fact that some letter arrangements bias the character frequency distribution (eg QU and ING tend to occur together) I have been pleasantly surprised with the performance of this scheme. Table 1 gives the descriptor table search analysis of the current 12200 word test dictionary when mapped into a hash file of 20983 slots...

Found Successfully with Accesses required

| | |
|------|----|
| 8731 | 1 |
| 2147 | 2 |
| 727 | 3 |
| 321 | 4 |
| 145 | 5 |
| 63 | 6 |
| 29 | 7 |
| 9 | 8 |
| 10 | 9 |
| 7 | 10 |
| 6 | 11 |
| 3 | 12 |
| 1 | 13 |
| 1 | 14 |

Table 1: hit/collision data from the dictionary test file

These results shown in table 1 are surprisingly good especially considering the simplicity of the hash functions adopted: 8731 (71%) of table entries were located first time, i.e. with a single seek. The first two results indicate 10878 words were found within 13025 table seeks - that is an average of better than 1.2 seeks before the slot was located. If we take the first three results into consideration we find that 11605 records were located by 15206 seeks - that translates to 95% of the 12200 word in the dictionary being found on average within 1.25 table seeks. The worst case performance with the test dictionary file was 14 accesses, still not bad when you remember that this means that only 0.10% of the descriptor table had to be searched.

The use of separate dictionary descriptor and dictionary data files does of course carry the overhead of an additional seek being required to confirm (or fail to confirm) the identity of a particular word. This overhead, would of course be present in any arrangement which stored the data being accessed separately from the descriptor table itself and it could only really be eliminated by increasingly the slot size so that a fixed size dictionary word space field was made available within the hash-slots of the descriptor file. The disadvantage of that approach would have been a lot of unused space in the word fields.

Well, that then is how the hash descriptor is being built - next month we shall be dealing with the ADT-style dictionary interface code that makes use of it!

...to be continued

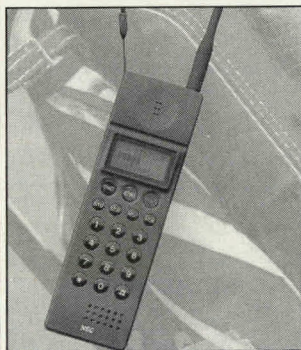
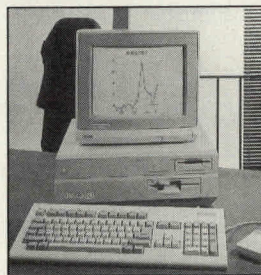
Unfortunately the AUI disk was too full for us to fit the AUI Spellchecker code this month. However, to coincide with the completion of the ADT-style dictionary description, a complete runnable version will be included on the disk next month.

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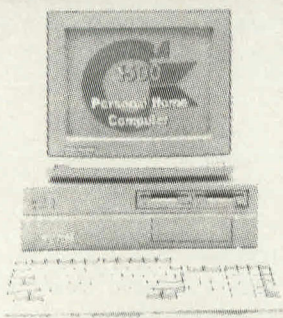
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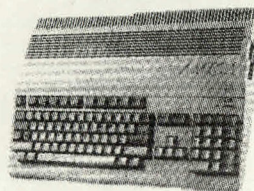
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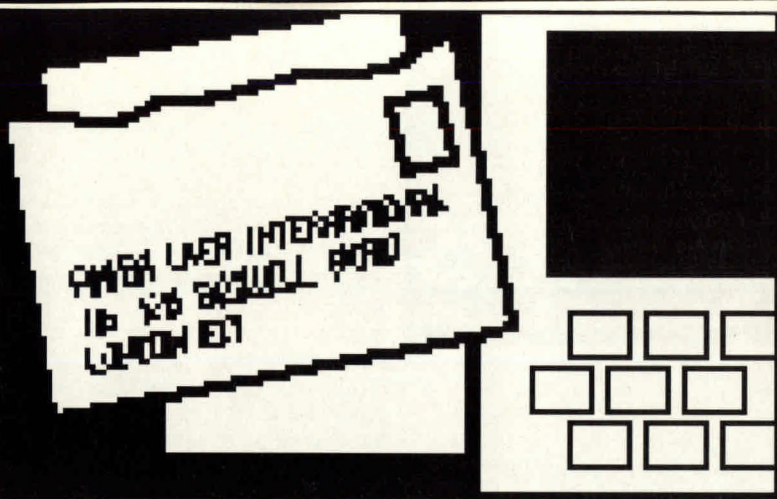
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AMIGA ANSWERS

Andy Eskelson searches out the answers to your tough technical questions



Dear AUI,

As an eighteenth birthday present, I have been offered a monitor for my Amiga 500. There are several features I am looking for:

- * The best high resolution and colour output. (Flicker free?).

- * Dark, non reflecting screen.

- * Vertical and Horizontal control knobs (as well as the normal controls).

- * Doubles as a television. (stereo sound?).

If you know of any monitor filling all or most of these specifications, I would be very grateful if you could advise me. Do you know anything about the Philips CM8833/II colour monitor?

Also, if you know of any good suppliers in the West Yorkshire area, this would be a great help.

Thank you for any help you can offer me.

**Brett Buckley,
Huddersfield.**

Dear Brett,

HAPPY BIRTHDAY!

There are no monitors that will do all that you want. If your prezzis will stretch to the expense try for a multisync. I use the CBM 1950, and it is a VERY nice display. You cannot get a flicker free display without something like a flicker fixer and a multisync.

Unfortunately many monitors do not have sound, but there are several TV tuner modules that can be connected into a monitor. (check out some electronic hobby mag for adverts, they are often cheaper than the computer related companies) If you cannot find one try looking for a cheap VCR, and use that as a tuner. (old betamax machines often appear VERY cheaply) It would be worth while setting up a small amp and speaker system for the Amiga anyway, so don't worry too much about monitor sound. I use the Tandy SA 10 amp and a couple of small car shelf speakers. It only delivers a watt or so per channel, but that is more than enough.

The CM8833/II 14 inch, 0.41

dot pitch, with stereo headphone socket, is very similar to the CBM 1084S. Beware of the dot pitch, a high res monitor will have a 0.28 or better dot pitch, so the 8833 is just an average monitor.

The only company that I will recommend is Trilogic (Bradford), and that is because I have had personal dealings with them, and they know what they are talking about.

Dear AUI,

In your Amiga Answers column of the May issue of **AUI** was question from Chas Dainty asking about where to buy ink cartridges for the MPS 1270 printer.

I too own a MPS 1270 printer and have had no difficulty in obtaining the cartridges here in Holland - they are available in most computer shops and even in the local department store.

Firstly, the printer uses standard HP (Hewlett Packard) ink cartridges, the same as sold for the HP ThinkJet, HP QuietJet and QuietJet Plus. Since the MPS 1270 is quite new it could be that most stores in the UK are not familiar with this fact yet. However, I have had no difficulty when asking for "Ink jet cartridges for the Commodore MPS 1270." I suspect your reader's problem may be due to lack of product knowledge by the dealer who sold him the printer in the first place!

I would be surprised if the cartridges are so elusive in the UK, since the HP printers that they were originally designed for have been available in the UK for some years now. It would be worthwhile asking HP (based in Reading, Berks) should you have great difficulty in finding the cartridges. The HP part number is as follows:

Paper (high quality and heavy graphics use) : - 92261A

For Common Plain Paper:- 51604A

For use on HP JetPaper Red ink:- 51605R

For use on HP JetPaper Green ink:- 51605G

For use on HP JetPaper Blue

ink:- 51605B

The HP cartridges are also available from Kodak. The leaflet inside the cartridge packing also contains some telephone numbers to use in case of difficulty in finding a dealer ;

UK:- 0344 773100

Holland:- 020 547 6911

One final piece of advice, shop around since the prices vary widely. The price of the 92261A cartridge costs dfl 50 (about £15) in some shops and dfl 35 (about £11) in others. One final comment for the MPS 1270. Use the Epson_X driver, but before using the printer, send the print codes to set the page length, since those sent by preferences appear to be ignored. Maybe somebody will write a short CLI utility to add to my StartUp-Sequence to cure this.

**Andrew Work,
Leiden,
Netherlands.**

Dear AUI,

Help is at hand for Mr. Dainty (Amiga Answers May 91) and his MPS 1270 ink jet printer, the plain paper printhead cartridge that fits this printer is made by Kodak cat. No. 822 3893, my local computer shop keeps them in stock, Burnley Computer Centre, 38 Manchester Rd. Burnley, Lancs. tele: (0282) 34772.

If Mr. Dainty contacts me I will gladly get one, and send it to him.

**Jeff Murry,
Burnley.**

Dear Andrew, Jeff and others who sent in letters about this.

Thank you VERY much for this information. It is great to see that readers are helping each other and passing on useful information. There is no problem in obtaining ThinkJet cartridges, I have bought them from Inmac, PW, Action, and quite a few others.

I agree that lack of product knowledge is the likely cause, but would it have hurt Commodore to put a list of compatible cartridges

in the manual?. For normal use the 51604A unit is about the best. Note that not every inkjet printer likes the special paper. I have tried the HP paper on the Epson SQ2550 and the results are nasty and blurred.

Once again many thanks.

Dear AUI,

I bought a s/hand Philips 80 mono monitor, without instructions, & despite having tried the leads in all the different permutations am unable to get any sound from this monitor. could you please tell me if you think that the monitor is at fault on am I connecting the leads from my '500' wrongly,

**A. McBurnie,
Antrim,
N.Ireland.**

Dear A. McBurnie,

This may sound a bit silly, but has the monitor actually got a loudspeaker? If not then that is the problem. Many monitors do not have any Audio facilities, and quite often a monitor will be specially produced with a specified range of options to meet a particular requirement.

If your monitor has a loudspeaker then you have one of two problems, first that the monitors audio system is faulty, or second that you have lead problems. If it turns out that the monitor is faulty or does not have a loudspeaker, don't worry about it too much. The Amiga deserves better than a monitor, connect up a small stereo amp and speakers to it, the Tandy SA 10 is a reasonable unit for the job as is the Miniamp 4 from Trilogic.

Dear AUI,

I am in the process of learning to use the program "Professional Page 1.3" and have encountered a problem in printing pages on my Hewlett Packard LaserJet II printer. My printer has an A4 (8.27" x 1.6") paper tray installed and I select the A4 page format on which to lay out my page

On the screen, everything looks

AMIGA ANSWERS

C O N T I N U E D

◀ fine, but when I print, I find that anything located in the lower 4cm or so of the page simply will not print. After working for days, altering margins, changing page sizes in Preferences and so forth, I finally found buried in a readme file on one of the PPage floppy disks a notice that, on the LaserJet II, only an area of 8"x10" (20.32cm x 25.40cm) can be printed. Upon more research, I find that the same proviso is made in the AmigaDOS manual. This indicates that the printing area limitation is apparently inherent in the LaserJet II printer driver included with WorkBench 1.3.

I know that this is not a limitation of the printer itself, since I use my LaserJet II with an MS-DOS computer and am able to print on virtually the entire surface of an A4 sheet of paper! This limitation imposed by the Workbench 1.3 printer driver seems exceptionally stupid on a computer of the power of an A2000 running software with the potential sophistication of "Professional Page 1.3". My A2000, by the way is expanded with a GVP 68030-33Mhz accelerator, an additional 4MB of RAM and an 80MB hard disk. My LaserJet II is also expanded with an additional 1MB of RAM, which should allow full-page 300\300 dpi graphics, and does on my MS-DOS machine.

My question, essentially, is this. Do you know of any available LaserJet II printer driver which can be substituted for the driver included in Workbench 1.3 and which would allow a more normal coverage of an A4 sheet? I would be very appreciative if you could let me know of such a product?

**John G Bane,
Italy.**

Dear John,

This is a very silly problem and it is one that is often talked about. The problem seems to come from the silly idea of A4 that the person who wrote the driver had at the time. I do not know of any up-to-date drivers for the Laserjet II but there have been one or two attempts to hack the original driver about. Unfortunately this cured

some problems and created others. It would be worth keeping an eagle eye on the BBS systems, as that will be the first place that any driver will appear.

Dear AUI,

While reading Amiga Answers (April Edition) I was very interested in your reply to Alped Borg of Lancs, I would also like to improve the output from my Star LC10 printer when using it with X-CAD Designer, so when I read about the PD utility PLT which you are using to convert the Dot Matrix output to HPGL plotter I was sure it is just what I need, but where Can I get a copy?, I have rung Amiganuts, Softville, Anglia, Crazy Joe's, PD Direct but alas no PLT.

The question is how can I get a copy of this utility, and please in future replies in your column would you let your readers know where to get these things from.

**W Hardwick,
Bishopstoke.**

This program has caused me more trouble than I would have thought!, (it was sent to me by someone on CIX about a year or more ago). I can't find any trace of it in any library either!. It is PD, as that is what is stated on the readme files. I did find a reference to it in one of the ICPUG lists but not the program itself. I have uploaded it into the ICPUG conference on CIX, and also onto the Focal Point BBS Amiga section.

Dear AUI,

Could you guide me in the right direction as to how I determine how many floppy drives are connected via assembler. What I mean is the program I am writing requires to know how many drives are connected when the program is run. Is it a matter of polling a hardware register. or is the relevant information in a system structure.

**C.W.Cannon,
Romford,
Essex.**

Dear C.W.Cannon,

The information that you require is held in the DosInfo structures that are maintained by the DosLibrary. The process is quite complex and I will have to refer you to the AmigaDos manual (Bantam) the basic principle is as follows:

Get the pointer to the AmigaDos lib. This has several pointers in it, extract the pointer to the DOS shared global vector structure.

This again has lots of pointers, extract the pointer to the info structure. This has (guess what!) lots more pointers!, extract the Devinfo structure pointer.

The Devinfo structure is the start of what you want. It will point to the next Devinfo structure, and give you lots of info about the device including its name, which is what you want to test for.

One last problem for you, many of the pointers are in BCPL so be careful!

Good luck with that lot!

Dear AUI,

As a subscriber to **AUI** for several years now, I hope you'll let me into your superb letter service. I really need help!

problem 1:

Earlier I've bought a STARBOARD 2 ram-package (auto-configuring) populated with 2 megs for my Amiga 1000.

As more ram was needed, I newly invested in a Commodore Hard drive 590, also populated with 2 Megs. (It's perfect with the A1000 as well, if you don't know!)

Each of the items are perfect functioning alone. But put together, (that is the starboard 2 between the A1000 and the 590) the 590 and its 2 Megs become invisible to my computer. Neither is its icon seen nor its ram counted. If I boot with a WB from DF0: The system finds the starboards 2 megs as before, but the way through its through port (where the 590 is) is invisible.

Later I've been told that a great lot of brands (ram) can't function with each other. Is this really true?

And yes I have been writing to Oasis Services Ltd who delivered the starboard, asking if there was something to do, they never answered.

Problem 2:

Dubious firms/dealers. I have tried to order from advertisements in **AUI** a few times, and that has proven to be a safe way to get in trouble. My main way to reach all the goodies out there is through this advertising, and a major reason for buying **AUI**.

My question is: are you willing to help on keeping a good standard for us readers concerning your advertisers?. That is if dealers are proven troublesome do you dear report our claims. I for one am astonished and mad of the way I feel we readers can be treated. I begin to understand I'm 100% lawless, and the only

way to give strength to us consumers is a way to tell others about our experiences.

Hope you see the need for this and I'm eagerly to start with my first two stories:

27 oct 89 I ordered from Oasis Services Ltd, 17 Andrews Place, London SE9 2SJ, a mouse time Amiga Clock GBP 24.00 was sent by Giro Account. Money is raised, but nothing is ever received. I've written them several letters asking. Never an answer.

10th Sept. 90 I ordered from Dataplex, 129 Bath Road, Slough, Berkshire, SL1 3UW a HP paintjet printer GBP 705. The firm was allowed to use a visa account. Some days later they rang back saying they wanted a higher amount for the printer than that in the advert.

I did not accept, and the case So be warned of Dataplex don't either believe in safety of using VISA As long as VISA finds it OK to let firms like dataplex use this form of payment you can get seriously robbed.

**Ketil Hall,
Skogveien 37,
9400 Harstad,
Norway.**

Dear Ketil,

*I am going to pass most of your letter onto the Amiga Letters section as that is the best place for your comments. If you are dissatisfied with a company and its adverts there is an Advertising Standards Authority that you might like to send a copy of your letter to, There is a panel devoted to them in each issue of **AUI**.*

Your problem with the Starboard is not a new one I'm afraid, and I do not think that there is any ready cure for it. Different types of memory CANNOT be mixed, but there is nothing stopping one board using one type and another board using a different type. The two boards should work together if they have been designed properly.

I seem to remember that the starboard had compatiability problems with a few other products as well, and it was something to do with the throughport.

The Starboard is Manufactured by Microbotics try writing to them directly, and TELL them about the non service that you have had from their distributor. Their address is:

**Microbotics, 811 Alpha Dr.
Suite 335, Richardson,
TX 75081
Tel. 214/437-5330**

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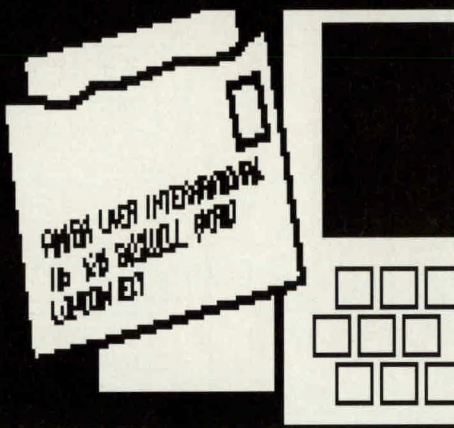
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WRITE TO REPLY

WRITE TO REPLY

This is where you get your chance to speak – or write – your mind about what's bugging you – or your computer. Bud Vennos fields the bouquets and the brickbats.



Dear AUI,

I am quite sure I am not alone when I say that I have found computer software houses are, in general, the most ignorant people I've dealt with. They fail to answer letters even though they are provided with a S.A.E.. I've even rang through an operator and offered to pay for the call, but to no avail. If I sound annoyed, you bet your life I am!

**Cyril Kellam,
Sheffield.**

Dear Cyril,

Without sounding off too much, Have you ever read your handwriting - we could barely make out what you were saying. Try and write in block capitals and then, maybe, the software houses will realise what your point is, or better still print it out. Unfortunately software houses rarely have a Complaints Dept., and as far as I've found, when I phone them they are willing and eager to help, even before they know I am a journalist - and in some cases that hinders rather than helps me!

All that can be said is that you may be phoning the wrong number, addressing the wrong person, or adopting the wrong tone. Keep trying, or ask to speak to the Managing Director (or say you are from Commodore!)

Dear AUI,

Congratulations on using the Hyperbook to create an interactive magazine. Now you have used the idea why not run a competition to see who can create a hyper-Workbench. This program would use existing programs so a complete beginner could get the most out of Workbench. Alternatively, what about an interactive book for a commercial product to help sell the product, or to help the end user to use it to the full.

I feel sure that many readers would welcome the chance to do this, and as far as I can tell no-one has tried to do this before. As a pioneer in the Amiga field does this idea merit consideration.

The idea of returning used cover disks to enter a competition is a good one. However, if your cover disks are this good no-one will want to give them up.

Thank-you for an excellent magazine and for showing me the possibilities of using Hyperbook which, when funds permit, I will definitely purchase.

**James Abram,
Wolverhampton.**

Dear James,

Ever since he reviewed Hyperbook, Pat Kelly has always given praise to it. When we knew the format which the Userdisk would follow he suggested that Hyperbook should be used as it was the right tool for the job.

Pat doesn't configure the disk (he is too busy doing other things), but it is very easy to construct - that is its major feature - and John Kennedy has been given the responsibility. It isn't a hard task, but it is a creative one, as the pictures and layout presentation makes all the difference.

I would say that Hyperbook was a Workbench-style derivative. However, you could create your own Hyperbook-Workbench environment in 16 colours, but you would need a lot of memory just for an aesthetic front-end. There is no advantage in doing this - it seems to be a case of doing something for the sake of it rather than for a set purpose, or need. There is too much of that happening already - do we need more?

If you want to get the most out of Workbench, you have to learn its ways and another front-end, such as Hyperbook, will not solve this.

The best way to get the most out of Workbench is to read the Understanding The Amiga series on Workbench, currently at Part 4. This is a simple tutorial, and like the Hyperdisk there is nothing complicated about it. All of the topics covered in the series can be found in the many books on the Amiga's Workbench for those who want more information sooner.

Think Ltd. are one such company who are spearheading the commercial uses of the Hyperbook, and will be releasing products which are accompanied by a Hyperbook disk manual. The manuals give examples of the product and are far better than their usual, and restrictive, paper counterparts.

No-one need find it necessary to complain if they do not like their cover disk, or if they have used it and need it no longer, as they can enter a superb competition simply by returning their disks. Now that isn't bad, is it?

Dear AUI,

In response to your very polite, almost psychopathic, request to me, page 128 of the July issue, I enclose a copy of my first letter to you that you so sadly "lost".

Since I am obviously in line for a brickbat I may as well add a couple of additional points:

Firstly, if you are to have a little graphic of your address on your letters page why not make it legible?

Secondly, I was unsurprised by the results of the recent survey in a rival magazine to find myself in a less than 3% minority, not only female but (well) over 25 and not at school. Wouldn't you like to extend your readership?

I am sure that your desire to read my letter has nothing to do with its partial publication in Amiga Computing and I iterate here all that it says. Girls and women should not be excluded from or patronised in the microworld of computing, and magazines like yours are very powerful role models.

Since you have doubtless read my letter to Amiga Computing, you will know that I am not an Amiga User - I use, and dissect, PCs, BBCs, Macs and Nimbuses, not to mention the odd Spectrum. I've suffered a lot of patronage in the course of acquiring my knowledge and would like to feel that other females will not share this experience. It's my husband's (new) Amiga that he and my daughter use (and that I will too, once he gets a proper monitor). New computer users scavenge for every crumb of information they

STAR LETTER

Dear AUI,

Although the new CDTV isn't a real Amiga (according to Commodore anyway, since they won't allow the word 'computer' to be used in the same sentence as it) will AUI be covering it?

As my current Compact Disk player is nearing the end of its natural life (needing the application of a screwdriver to open and close its little door) I was thinking to buying a CDTV to replace it. My plan is to use the CDTV for music and games, whilst preserving my A1500 for more serious duties.

How well does the current range of CDTV titles compare in quality and price to the (overpriced in my opinion) floppy disk versions?

**Gary Hardy,
Belfast.**

Dear Gary,

AUI will certainly feature the CDTV, probably when all the hype has died down and an actual product are more widely spread. The A690 CD disk drive will bring the CDTV to current Amiga owners, so I wouldn't rush out and buy a complete CDTV unless you have money to waste. My guess is that the CDTV will be the techno-toy of current Amiga owners. CD-I may well be a much more popularly supported format to those who will buy a complete new computer/CD unit. However, its cost will keep it out of public hands for some time yet.

The current range of CDTV titles, although many are still in a prototype form, compare very well with Amiga software. However, at present, there is no real linkage between the CDTV and the Amiga software i.e. unless you recognise the small subtleties that give it away, you wouldn't think that the CDTV was an Amiga. Nevertheless, I will bet that CBM sells more A690 drives than CDTV's in the first year.

CDTV software, in general, will be more developed programs with much more research and content in them, and so possibly will command a greater asking price. As always at the beginning of a new technology, some companies are trying to make a quick buck out of the situation with some really diabolical product, and perhaps will get away with it.

As a special prize I am sending you one of the very first CDTV titles - CD Remix from Microdeal - with which, when you buy your CDTV, you can resequence your audio CDs to create remixes of your favourite tracks

can get and that's why he buys your publication. You may take consolation in the fact that I consider Amiga Format to be quite repellent, making your magazine appear totally innocuous.

**F.A.Mari,
London.**

THE ORIGINAL LETTER

Dear AUI,

I am writing as a computer literate parent, future teacher and woman, to 'boot'.

I wish to point out a dichotomy in the ethos of your publication, in terms of your supposed audience.

The Amiga 500 is currently being heavily marketed as an educational tool. Purchasers who thus buy are extremely likely to purchase your magazine, among others.

The article on the 'first' computerised jigsaw, page 12 march 91 issue, was a blatant plug. I am appalled that you evidently felt it worthwhile to celebrate this waste of time and intelligence on the part of the (doubtless male) programmer, and with a picture, too.

In fact, several jigsaws are available from PD/Shareware libraries that are suitable for ALL Amiga users and which do not convey the efforts and rewards of programming.

You may feel my point is petty, but, despite this being a land of legal equal opportunity, fewer and fewer women are involved in computing above the light pen/barcode data input level, and fewer and fewer girls and women are studying computing in secondary schools and in higher education. Yet both Commodore and yourselves, by extension, are targeting these very girls and women as purchasers.

It really is about time that some thought was given to the *raison d'être* of computing. Would YOU like your son/brother/father to buy this jigsaw? Do you think it likely that your daughter/sister/mother would buy it? Would you like your daughter/sister/mother to have been the model for this jigsaw?

I read a lot of publications and this problem is virtually prevalent, especially in publications catering for the so-called games market, as well as, most unfortunately, among user groups and shareware libraries.

It wouldn't hurt to think about this, would it? After all, every purchaser of your magazine pays the same cover price - why should some of them feel offended? It is interesting to observe that conversely the magazine Amiga Computing is actively seeking views about sexism. Of course, it's unlikely that you will publish this

- but then that's my point.

**F.A.Mari,
London.**

Dear Ms Mari,

In a recent broadcast discussion on psychiatry, a renowned psychiatrist commented "There is an evolutionary and biological distinction between the natural drives of men and women. Men produce millions of "seeds" and by their nature are caused to seek many partners and their fantasies are likely to be promiscuous..." The psychiatrist then went on to say, "Women are, however, producers of a small amount of "eggs" and they are therefore naturally more choosy in selecting their partners and more monogamous in desire."

If this statement is correct, and it seems that most of those working in the field broadly agree, it is likely that what pleases and excites men will not necessarily be found to give pleasure to women. But should that be a sufficient reason for depriving men of their enjoyment? Of course, if the view is taken that Page 3 style exposure or pornographic material is actually dangerously corrupting or damagingly anti-social, then perhaps justification may be made for banning such things. But that view is neither proven nor universally accepted. So if programs of this kind exist for Amiga users, who are, in fact, mainly male, then reporting their existence surely becomes legitimate. News contains many actions and activities of which one may disapprove but it is no part of the news editor's task to make up rules of morality as he/she goes along or prohibit mention of products which may not appeal to some of us. If that happened we would become self-appointed censors not editors.

As for fewer and fewer girls studying or being interested in computing, our experience is exactly to the contrary. Many more girls are today exposed to computing at school, and, with PCs on almost every office desk and computers like the Amiga easily available in the home and ever more active in specialised areas such as graphics, where women are well represented, their contact and opportunities to use computers increase still further. An example of this is F International, a large software company that was founded and is still run and staffed almost entirely by women.

We don't wish to offend anyone who sees AUI and certainly not the 50% of our society that is women. Indeed we welcome them as readers possibly more than any other Amiga magazine. But we must keep

a sense of proportion, not everything that is physically attractive or sexy is exploiting women. That jigsaw featured the human body and there is nothing that need be hidden as offensive there, as artists throughout the ages have shown. So if it were my sister/daughter/mother, as long as it were aesthetically pleasing, nudity, even provocative nudity, would be nothing of which I need disapprove or be ashamed, any more than could the Spanish noble family of the Duchess of Alba when she appeared as *La Maja Desnuda* - The Naked Beauty - in the painting by Goya in a much less sophisticated era.

Returning to the psychiatrist's point, if men are by nature more sexually adventurous and it is, sadly perhaps, they who form by far the majority of AUI's readership, there is a case to be made that they are entitled to enjoy their tastes - as too are women in the particular areas that interest them, without the editorial staff of this publication being forced into the position of restrictive and hypocritical censors.

A recent survey showed that a substantial proportion of the women of this country insist on making love in the dark for fear of what their husbands or lovers will think of their "unslim" bodies. What would seem to me to better merit your attention and protest is a society that is so superficial and regimented that it causes women to have such a low self-image that a few pounds or kilos more make them inhibited enough to hide themselves in shame. Perhaps that is why their men go off and play with sexy jigsaws...

Dear AUI,

I am writing this letter using a 512k A500 with a second disk drive (awaiting delivery of a 512k expansion) Protex 4.3 (the best WP around) and a HP Deskjet 500.

Firstly, congratulations on the best Amiga magazine around. I have only just started buying AUI

as I was fed up with the usual trashy games guides and I was just about to give up hope when I spotted this magazine. Any way, that's enough praise for now, so onto my reason for writing too you. I want to let you and your readers know of a FREE service that may be of use to new Amiga owners and veterans. The service is called the Amiga Helpline and they also give free advice on any Amiga hardware/software problems and also have available a large range of PD for only 50p and a blank disc and return envelope.

I am a novice Amiga user and have asked and received excellent advice on a large range of things such as using the CLI, comms discs, printing various files, printing problems, using various programs and loads of minor problems which I could not solve myself. All they ask is that you include full details of your system (ram, extra drives, etc.) and include as much information about the problem as possible and of course return postage and envelope. The address is:

The Amiga Helpline Service,
21 Skirsa Place, Cadder, Glasgow,
G23 5EE.

**Paul Morrey,
Stoke-on-Trent.**

Dear Paul,

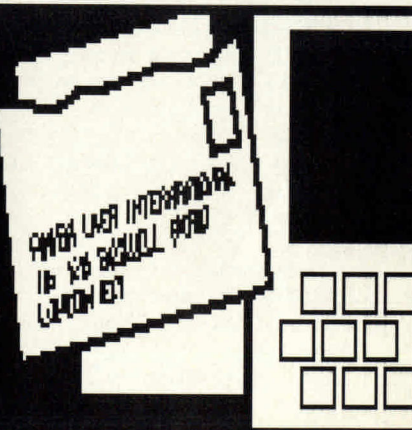
Sorry to be pessimistic, but you rarely get anything for nothing, especially not from a Scot. Have you received loads of junk mail from outfits such as Reader's Digest?

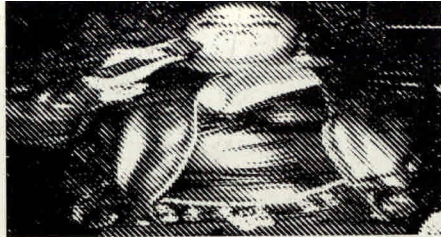
I presume, however, that the Helpline does not make its money from answering queries, but by selling its PD disks for 50p. Although this seems cheap you must supply your own disk and postage paid envelope. Again, this still works out cheaper than most PD companies, due to the low advertising and business overheads involved when running a large company dealing in PD.

Free advice is always helpful and I would have no worries in recommending the service if it was proven to be reliable. One wrong piece of advice, however small it may be, could cost its receiver a huge problem, or expense.

WRITE TO REPLY

*This is where you get
your chance to speak -
or write - your mind
about what's bugging
you - or your computer.
Bud Vennos fields the
bouquets and the
brickbats.*





THE FAT LADY SINGS

Vol.78 No.72⁷/₈

The page that brings you the undiluted, undenied, unreliable truth!

Coming to the **AUI** September Finale, we thought you, the intelligent Amiga magazine reader (and you can take that in two meanings, if you like) would appreciate an update on the latest in computer jargon. So we have picked up a bunch of the hottest buzz acronyms to let you in on.

These days if you know something, it is already out of date. What we are giving you here comes steaming off the neologism minting press. Use any of these collections of key cutting edge letters and you'll stand right out from the crowd of ordinary technoyuppies. As Jim Morrison used to sing, "Turn on, tune in and log out on what the real in-the-knowers don't even know yet, Amiga Abuser!"

ADA - American Defense Anxiety (Programming language recently found to be security risk)

ANSI - American National Standards Institute

BIPS - Billions of Instructions Per Second

BYTE - Bit You Thought Executed

C - Commodore

C Language - Commodore Speak (as in "No comment on James Minotto's departure")

CAD - A socially reprehensible programmer who does illegal and possibly immoral things to the Amiga's hardware (May sometimes write QUAD column for **AUI**)

CDROM - Can Deliver Ripped Off Machine

CDTV - Commodore Desperately Takes Valium

CDXL - Compact Disc Extra Large

CFTH (1) - Checkmate's 1500

CFTH (2) - Commodore's 1500

CHIP - Commodore Has It Positioned

CIM - Commuter Integrated Manufacturing

CITK - Coffee In The Keyboard

CLI - Cryptically Laidout Interface

COSI - Computer Services Institute (Chairman: Van Tutte)

CPU - Customised Powerless Useless (Very technical term)

DAT - The opposite of DIS

DAVID - Digital Audio Visual Interactive Device

DDMS - Distributed Database Management

DIL - Dual In Line (Plastic enclosed integrated circuit with chip moulded horizontally - sometimes called PEICWCMH)
DIR - Demand Immediate Refund
DIS - The opposite of DAT
DISK - Don't Insert: Spinning Kills
DOA - Dead On Arrival (as applied to computers reaching dealers or mail order buyers)
DRAM - A measure of refreshment for Scottish programmers
DRIVE - Disturbed ROMS Interface Violently Everytime
DTP - Don't Try Printing
DTPIE - Don't Try Publishing It Either
EDI - Electronic Data Interchange (Also the girl who serves DRAMS)
FAST - Frantic About Software Thiefs
FL - Fuzzy Logic
GTM - Guru Trancendental Meditation
IDEA - International Data Exchange Association
IDOPBMCV - See ZIP
IT (1) - In Tuition
IT (2) - Computer programmers do IT on their own
JKRNI BOG - John Kennedy's Real Name Is Brian O'Glitch
KATY - Kickstart This Amazing Yamaha
LISP - Programming language originating in Spanish cities of Barcelona (pronounced Barthelona) and Zaragoza (pronounced Tharagotha)
MATH - Mi Amiga Te Hodea
MDP - Mouse Drop Pings
MHz - Megahurts (Expression used when you have only 512K and the program needs at least one megabyte)
MHZ - MegaHertz, large car rental company
MIPS - Millions of Instructions Per Second
NINTENDO - No Intelligence needed to Electronically Nip Disks Off
NTSC - No Time Spent Computing
NOIDEA - National Officer, Interna-

tional Data Exchange Association
PEICWCMH - See DIL
PAL - Photos Always Lie
POWER UP - Paul Overaa Writes Every Arpeggio Under Protest
PQFP - Plastic Quad Flat Pack (portable programming trick series in **AUI**)
PSU - Permanently Seized Up
QL - Quicklime (Product into which must be plunged the first UK 16 Bit computer with a stake through its CPU)
ROM - Run Outta Memory
SCUSI - Italian for GURU
SEGA - Some Easy Games Activity
SPERM - What Microsoft claim in their advertisement travels 147 inches in 147 minutes and Lotus say only ever gets to swim 7 inches (Who says size doesn't matter in computing?)
SQL - Structured Querty Language
TENATFOR - Commodore Monitor
TFLS - The Fat Lady Sings
THSTPS - Tony Horgan Stole The Power Supply
TIPS - Trillions of Instructions Per Second (Also what EDI gets)
TLTA - Too Long Too Abbreviate
TLTLG - The Long Thin Lady Groans
UAE - Unrecoverable Applications Error
UKCMG - UK Computer Measurement Group. (mostly programmers who claim size is very important)
VD - Video Doaster
VLSI - Very Loud Sexual Interface
WYSIWYG - When You Stumble Into Workbench's Yellow Guru
WTPO - Workbench 2.0
WOPT - Workbench 1.3
ZIP - ZigZag Inline Package (increasing density of PCBs by mounting chips vertically also called IDOPBMCV)
ZZZ - ZZZ - ZZZ - Noise made by Correctly running 3 1/2 inch drive (and by the User waiting for it to finish loading)

COMPETITION WINNERS

BOARD GAME COMPETITION

This competition was run in the May issue of **AUI**. The answers were:

1. Koreans
2. 361
3. 2

The 10 prize winners will receive a copy of Backgammon, and a copy of Go. They are:

P. Atkins, Argyll. A.D. Lockley, Warks.
 Mr. M. Unwin, Bordon. J.F. Bates, High Wycombe. P.R. Burton, LAD REME. K.R. Butterworth, Preston. I. Hunter, Manchester. Peter Caroian, Belfast.
 I. Niven, Bellshill. M. Hutchinson, Torquay.
 Prizes should be received within 28 days.

UPGRADE COMPETITION

This has, by far, been our most popular competition yet and was run in the June Edition of **AUI**.

The answers to the Upgrade competition were:

NEWTEK
 HAM-E
 £23.40

The answer to the Amiga Hardware Reference Manuals Competition was:
 JOHN KENNEDY

The answers to the Game Competition was:

17
PGA TOUR GOLF - 94%
 Kickstart V1.3 and Fat Agnus Upgrade
 Winners are:
 Warren McCormack, Sutton Coalfield.
 G.S. Johnstone, Elgin. Paul Magee, Warlingham. G. Ferguson, Allan. Lee Pearson, Milton Keynes. Ian Pollard, Kent.
 P.D. Bain, Dyfed. M. Rackley, Stone. K. Rai, Warley. L. Almond, Stanmore.

The Reference Manual Winners are:
 S. Lawrence, Shropshire. G. Wall, Tyne & Wear. W. Liu, Surrey. Philip Elworthy, Cornwall. P. Kickenny, Stockport.
 J. Matthews, South Wirral. P.M. Connelly, Clwyd. J. Reeve, Walthamstow. Andrew Fyvie, West Wimbledon. P. Simpsow, Anglesey. G.W. Jones, Haworth.
 W. Walker, Dudley. Ian Conway, Bridgton. M. Russel, London. Robert Scott Bradley, Northants. Bernard Child, Kent.
 G.E. Lucas, Staffs. Laurence Bowyer, Berks. M. Shillito, Otley. Andrew Broadhurst, Gainsborough.

The Free Games Winner is:
 Paul Lyons, Birmingham.

Her sister, the long thin lady.

THE COMPLETE COLOUR SOLUTION

Vidi ... No 1 in UK & Europe (Leading the way forward)

£179



Get the most out of your Amiga by adding:

"The Complete Colour Solution"

The Worlds ultimate creative leisure product for your Amiga. Capture dynamic high resolution images into your Amiga in less than one second.

And Look No Filters

Images can now be grabbed from either colour video camera, home VCR or in fact any still video source. The traditional method of holding three colour filters in front of your video camera is certainly a thing of the past. Because Vidi splits the RGB colours electronically there are no focussing or movement problems experienced by some of our slower competitors. Lighting is also less of an issue as light is not being shut out by lens filters. Put all this together with an already proven Vidi-Amiga/VidiChrome combination and achieve what is probably the most consistant and accurate high quality 4096 colour images ever seen on the Amiga.

The colour solution is fully compatible with all Amiga's from a standard A500 to the ultimate A3000. No additional RAM is required to get up and running.

You will see from independant review comments that we are undoubtedly their first choice and that was before the complete solution was launched. If you have just purchased your Amiga and are not sure what to buy next, then just read the comments or send for full review and demo disk.



Actual unretouched digitised screenshot

Features ...

- Grab mono images from any video source
- Capture colour images from any still video source.
- Digitise up to 16 mono frames on a 1meg Amiga.
- Animate 16 shade images at different speeds.
- Create windows in both mono & colour.
- Cut & Paste areas from one frame to another.
- Hardware and software brightness & contrast control.
- Choice of capture resolutions standard & Dynamic interlace.
- Full Palette control.
- Add text or draw within art package.

Amiga Computing: The best Amiga digitiser has had the technicolour treatment. Vidi must be one of the most exciting peripherals you can buy for your Amiga.

Micro Mart: When I first saw Vidi "in the flesh" as it were, at the CES show last September it looked to be the answer to a frustrated Digi View owner's dreams - in fact to see pictures appearing on screen without the customary two minutes wait seemed almost too good to be true. I have consistently produced more good quality pictures in the short time I have had Vidi than I ever did with Digiview.

Zero: Now under normal circumstances cheap usually means poor quality but this is not the case with Rombo. Why? cos Vidi-Amiga is the best digitiser for under £500 and I've tried them all.

Amiga Format: Where quality is concerned, Vidi produces some of the best results I've seen on any digitiser at any price.

Amiga User International: The latest addition to the Rombokit is called Vidi-RGB and brings this already impressive package to the realms of totally amazing. **CONCLUSION:** Who will find Vidi-Amiga useful? The answer to this is almost anyone with a video recorder or camera and a passing interest in graphics.



Full colour demonstration disk available for only £1.95 to cover P&P.

6 Fairbairn Road, Livingston, EH54 6TS. Tel: 0506-414631 Fax: 0506-414634

Rombo
Limited

Just The Facts:

What Makes Digi-Paint 3 the Ultimate Paint Program?



"Finding the best paint program for your Amiga can be confusing, but once you have the facts it's simple."

Laura Longfellow
Sales Manager
NewTek Inc.

"Why is Digi-Paint 3 better than DeluxePaint III™?"

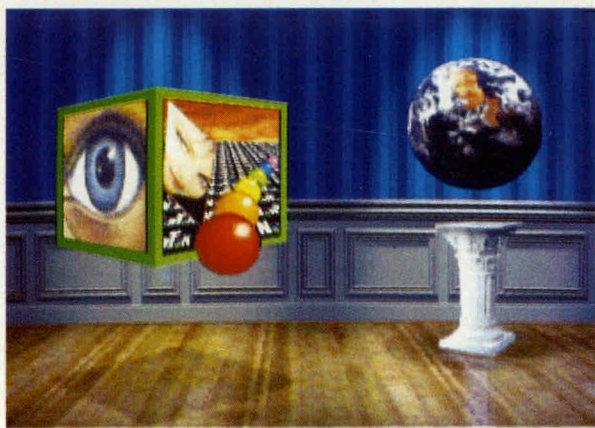
Digi-Paint 3 works in the Amiga's powerful Hold And Modify (HAM) mode, which allows you to paint using all 4096 colors simultaneously. By comparison, Deluxe Paint III (by Electronic Arts) operates in less sophisticated modes, restricting you to a maximum of only 64 colors. Advanced features available in Digi-Paint 3—including Colorizing, Variable Transparency, Shading, Lighten, Darken and Range Painting—are simply not possible in Deluxe Paint III due to its 64 color limitation. AMIGAWORLD warns, "Competitors may want to head back to the drawing board, because Digi-Paint 3 is hard to beat!"



"What makes Digi-Paint 3 better than other HAM paint programs?"

Digi-Paint 3 is the only Amiga paint program written in 100% assembly language. Although challenging to program (taking up to 10 times longer than other computer languages), it's the only way to achieve the incredible speed found in Digi-Paint 3. AMIGAWORLD calls it "the fastest HAM paint program yet" and AMIGA SENTRY estimates it's, "6-10 times faster" than the nearest contender.

Other advanced features found *only* in Digi-Paint 3 include: anti-aliased texture mapping, anti-aliased fonts, ARexx support, 1024 x 1024 super bitmaps with auto-scrolling and dithering to 30 bits per pixel (over a billion colors internally, giving you tens of thousands of apparent colors). COMPUTER SHOPPER magazine reports "Digi-Paint 3 is without a doubt the most advanced HAM paint program to date!"



"But is Digi-Paint 3 easy to use?"

I've learned that no matter how powerful a program is, if it's not friendly it's not worth my time. We designed Digi-Paint 3 with all users in mind—from the beginner just starting out with computers, to the "power user" who demands the most advanced features possible. The spiral-bound manual contains a step-by-step Guided Tour, 11 hands-on tutorials, a color coded reference card, and almost one hundred example photos.

Digi-Paint 3's intuitive user interface was created by Digi-View designer (and NewTek Founder) Tim Jenison and renowned Amiga artist Jim Sachs. It features innovative "Dashboard" controls which AMIGAWORLD regards as "a joy to use" and "very easy to learn and understand". INFO MAGAZINE says the new interface "looks great and works logically".



"What is the Transfer 24 program included with Digi-Paint 3?"

Transfer 24 is a separate program disk included in the Digi-Paint 3 package, allowing you to alter any picture's brightness, color saturation, contrast, hue and sharpness, almost as easily as adjusting the controls on your television set. Transfer 24 also lets you modify the size, palette, and resolution of any picture. These powerful features, known as "Image Processing", give you incredible control over your final artwork. You can also save your image in any of the Amiga's 24 resolution modes (up to 768x480) making it compatible with all Amiga graphics software. AX MAGAZINE notes that "Transfer 24 gives you even more options as to the final appearance of your work". AMIGAWORLD declares, "Transfer 24 is great for making overall changes."

For a NewTek authorised dealer near you contact
HB Marketing Ltd.
at 0753 686000.

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