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FORMAT

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incredible value ST and
Amiga software



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■ **Atari (ST)** - complete game



■ **Kingpin ST** - makes learning fun



■ **Pope (Amiga)** - fully playable Super-Palmer clone

FORMAT SUPERDISK

THE ACTION STARTS ON PAGE 37



THE BEST GRAPHICS EVER!

DRAGON'S LAIR

OUT OF THIS WORLD

- **VIDEO EDITING**
Amiga-MinigEN - Video recorder's home editing studio.
- **PIRATE OR PRIVATE?**
Multiface ST copier - is anything safe?
- **GET ORGANISED!**
Diaries, notes, addresses - DATAMax and Day by Day on test.

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4 GILBY STREET, LONDON
W1D 4BT
Phone: 0203 460034
Fax: 0203 460039

EDITOR
Ben Taylor

DEPUTY EDITOR
Richard Mowbray

DESIGN COORDINATOR
Jason Hobbins

GAME EDITOR
Steve Ingham

STAFF WRITER
Gary Barnett

ART EDITOR
Gordon Druce

DESIGN ASSISTANT
Savva Milosavljevic

ADVERTISING MANAGERS
Margaret Clarke
New London
Johnnie Rogers-Hew
21 Hyde Square
London SE1 1JL
020 433 1555

PUBLISHER
Craig Ingham

SUBSCRIPTIONS
Ask Steve Milosavljevic
John 0203 460034
or write to:
Future Publishing
100 Brook Road
Barnet, London EN4 8DF

MAIL ORDERS
For advertising in
The SAMMICA Magazine
contact:
Future Publishing
100 Brook Road
Barnet, London EN4 8DF

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Adam Jones
0203 460034

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Fantasy games that blow your mind get Gold this issue. Mind-boggling graphics in Dragon's Lair coupled with brain-busting puzzles in War in Middle Earth mean you're in for a real headache. That's fact. Following closely are Hybris, Secret of Sodor, Captain Flax and others.



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DISK EXTRA

Plenty of power-packed programs for your carnival this month. There's no piffle here, really.

BT

Starbug, a wonderful multiplayer maze game. **Opener** accessory which provides lots of cutting. **Disk Music** for editing your disks. **Hangman**, which needs no explanation. **Spacraft**, the software speech synthesizer. **Unwrap**, which gets its roots from the classic Connect 4 game.

AMIGA

Yalp, the fantastically addictive game with great graphics and terrific tunes. **LM Master** for those with CLIPboards. **Chaos** for speeding mouse operations. **Exploding windows** (77). **Wilets**, which will cause havoc with your Workbench.



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COPY RIGHTS?

Romantic Planet's Multitape backup utility reviewed this month raises a controversial issue: is it legal to copy software for archival purposes? A game costs upwards of £20, a serious application like a word processor often weighs in at around £100 and so-called 'professional' packages can be more expensive than your computer. The argument isn't whether you are being ripped off, but whether you should be entitled to copy the software you have bought. That's copy as in make a right backup, not copy as in duplicating 300 times for distribution round the country. Don't confuse making a backup with piracy.

There really isn't any option. You simply must protect your software investment. You'd be foolish not to, however, you'd probably be breaking the law at the same time. Unless a software house gives you permission to backup a piece of software (usually in the form of some clause in the documentation), you can be prosecuted in the civil courts. It's a Catch 22 situation - whatever you do you're in trouble.

Some packages come with a notice encouraging you to backup the software - but they are in the minority and are generally serious applications costing vast amounts. Most software unfortunately is sold without any proviso; there is nothing in the fine print that says you can't make a backup, but then again there's nothing that says you can. So what do you do? You have to phone the manufacturer and ask permission. Even if you discover you are allowed to make a backup, you probably won't be able to as the program is heavily protected.

A law is required that enables anyone who buys a package to make a single archival copy of the software. Alternatively it could be compulsory that software houses supply two copies of a program, one master disk and one backup. Of course there are other ways round the problem, but the sooner something is done the better.

Ben Taylor

TECHNOPHILE

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- Mega ST1 announced
- 1 Mbyte standard?
- Latest versions
- Amiga developers conference

The only way is up

\$12K isn't enough! That's the view of many software houses. And, it seems, the opinion held by Atari and Commodore. At the last count there were over 20 titles that require at least 1Mbyte of memory to run. For instance, 4Megat, RVP Professional, Cyber Part 2, Professional Page and Comic Setter. Unfortunately it's not only serious applications that suffer the 1Mbyte syndrome. Several games require more than 512K, — like Dungeon Master and Dragon's Lair — and others work more efficiently. Interceptor, King of Clowns, Topdown's name's less.

Commodore and Atari are well aware that the 512K memory pool is in the 8500 and 52000 demand pack nearly as much

GREY IMPORT FURORE

Over the past few months soft ware importer Gamslar, nestled away in rural Surrey, has been causing the UK software industry considerable concern. Gamslar first made its mark on the software scene when it introduced the Buena Vista game 19th framed Roger Rabbit to the British shores. Actionstar owned the official distribution rights and were not amused by Gamslar's interference, threatening legal action unless they withdrew sales.

It was problems with the marketing of the much-awaited Amiga version of Dungeon Master that really made Gamslar headline news. Microsoft had exclusive rights with the Californian-based FTI, to distribute Dungeon Master in the UK. However, Gamslar purchased smaller quantities of 85 stock from FTI, via its own Americanised branch and consequently managed to sneak in copies to the UK ahead of the official release.

Microsoft's Tom Ralston opined that Microsoft "does not support the workings of bootlegging importers because they don't necessarily benefit the consumer." At a price tag of £34.95 — 1Mbyte more than Microsoft's bid — this could be true, but at the end of

day Gamslar were the first to provide the consumer with Dungeon Master.

Gamslar are increasing their involvement in the software market. They now have exclusive rights to distribute all Discovery software which includes Sword of Solon and Hydrex. As far as its involvement in the games scene is concerned, Gamslar simply provides the customer with a speedy service, often having foreign products a long before other software companies — but at a price.

What looks less attractive is Gamslar's involvement in the pet cat software market. Calamus — widely criticised as the ultimate STP package — is a case in point.

Calamus has been on sale in the States for a month or two now, but over here Atari have the official rights to the product. Atari's Samy Still claims that the US version was "greatlybugged" and that the UK team are working on a reliable version to be launched in March. However, Gamslar now looks set

to release the uncorrupted version at a price of £250 as opposed to Atari's proposed price tag of around double that.

However, Michael Edwards from Gamslar assured potential clients, "In the event of any problems we would not hesitate in contacting the States and would even take money out of our own pockets to keep the customer happy." This might not be the ideal way of providing rapid software support, but at least the consumer can be assured of some help.



patch as it did when the machines were originally launched. Commodore has recently announced a bundling deal that includes an AM50, 512K expansion RAM and Dragon's Lair. Rumours have long suggested that AM50s produced later in the year will come with 1Mbyte of memory as standard.

A year ago the 52007 was seen as the highest games machine and the 1040 as the low end business machine. That's changed now. The 1040 is regarded as the highest games machine, even the much-maligned, 8088-based, laptop is to

come with 1Mbyte as standard.

Already on the drawing board for this year are Calamus, Videomax 3D 2, Papadream — it's unlikely that support for 512K machines will tail off, but all the really tiny stuff will require 1Mbyte.

Mega ST1 on the way

■ Atari have announced a new addition to the ST family — a one megabyte Mega. This new machine will effectively be a 1Mbyte game in a Mega clothing, giving a more professional look and keyboard for business use. Atari claim the machine will be launched in Europe, but adding to past performance that may be optimistic. A £380 price tag has been given to the new computer; this includes most modules.



■ A selection of recent software titles that require 1Mbyte or more (shown and more packages will need 1Mbyte in the forthcoming year. At this rate it won't be long before 4Mbytes are necessary.



Hard drive upgrade

A unique hard drive upgrade facility is being offered by Third Coast Technologies, whereby existing Atari-compatible drives can be traded in for larger, faster models.

The deal involves sending off your current hard drive unit - Atari 510/04 and 510/05, Magellan 20 and 30, entire Supra, Triangle and Curious range scooped in - and Third Coast will rip out whatever drive is present inside and replace it with either a 40Mbyte or 65Mbyte Miniscribe Winchester drive. Any data on the drive sent in is copied onto the new, high-capacity drive, along with a selection of 20 new utilities for partitioning, etc. Miniscribe drives typically provide 40% gain in performance and 50% increase in storage.

An 510/04 or Magellan can be upgraded to 40Mbytes for £249 - this includes VAT and installation. Larger drive upgrades are available starting at 65Mbytes for £295.

■ Third Coast Technologies, Unit 8, Bradley Hall Trading Estate, Sandon, Wigton, WA5 0XJ (03-628-0255)

An Atari 510/05 ripped open and shown with Third Coast's faster Miniscribe Winchester hard drive which boasts 40Mbyte storage.



Quickies

■ **Romantic** Adsoft is after a 48000 programmer to write software for its forthcoming real-time colour video interface. The hard-ware, which interfaces to both the ST and Amiga, is ready. The complete package should retail between £200 and £300. If you fancy taking on the job contact Romantic on 01-235-5870.

■ **Miniscript 2** for the Amiga will boost the Amiga's speed to give them a reproduction. Miniscript

IMG images for you with most STP and graphics software. Both packages together can be bought for £99.95, a saving of £20. Information on 0480 496769.

■ Just as we were going to press, a new Amiga expansion package, *Joystick* landed on our desks. On closer inspection this turns out to be a straight port of ST *CyberPaint 2* rebranded the issue. Unsurprisingly Joystick comes from Jette, creator of the Cyber series. Joystick requires 1Mbyte of memory, costs £79.95 and is available from 054-02553 56474.

company has supplied, an amplifier and a length of wire for plugging into the Amiga's audio sockets. Cost is £19.95. Details on 0274 891115.

■ **Electric Distribution** has two new clip art packages for the ST. *DrawArt* £45.95 and *ScanArt* £39.95 cost sets of a collection of



Three in one

Real fans of emulators will be pleased to know that they can now run PC and Macintosh and ST software all in one box. US Conder Computers has recently set up a US office in London to distribute their *Tronix* system.

Tronix is a 104001 offering PC and Macintosh emulation. Included in the system is a 30Mbyte hard drive, second 3.5" drive, 5.25" drive, real time clock,

colour and mono ST modes via a multi-bit monitor (capable of handling all Atari resolutions, IGC board 6845 V30 processor, CGA colour, 5087 coprocessor socket, 512K, extra RAM sockets) and Macintosh Plus emulator (reads and writes Mac 400K and 800K disks directly). Cost for this mammoth system is £2999 plus VAT.

■ Conder Computers, 51 Palace Street, London, SW11 6AN (01-850 8755).

Dungeon Master for A500s

Following weeks of speculation as to whether *Dungeon Master* would be available in 160K Amiga format, *Miniscript* can confirm that it will be debuting the product from America just as soon as PTU complete the revision of the 1Mbyte version.

According to Miniscript's MD, Peter Blois, the product is due to be released around the end of March. For over nine months *Dungeon Master* has been suitable for STs, due to the more complex structure of the Amiga, PTU wasn't able at first to fit the original ST code into a comparable amount of Amiga memory. Blois couldn't comment as to what else might be left out in the new colourised version.

Miniscript claims that *Dungeon Master*

has sold 40,000 units on the ST since its launch, and 10,000 on the 1Mbyte Amiga. The volume of Amiga sales has been in European markets for Germany and Switzerland. *Dungeon Master A500* will cost £29.95, the same as the 1Mbyte version, when finished.



UPGRADES

Following is a list of software upgrades with a brief note of what's new in the latest version. It covers a software house, but as know what's changed in your products and we'll mention you in future issues.

ST

Pain Painter 1.10, AMS - now works properly with hard drives. **Power Paint 1.23, MSB** - minor bug fix.

Vid 1.21, Rombo Productions - major upgrade which includes more software, camera representation, selection of frames and painting.

Worldle 1.30, HB Marketing - hugely improved manual, graphics can be stored and cropped, glossary added.

Amiga

MSB Paint 1.03, MSB - several major bugs to do with library functions removed.

SmithWords 2.05, One Company - Webster dictionary and thesaurus, automatic hyphenation, new fonts.

Printer 4.23, Arner - automatic stock setting for spell-checking and MSB compatibility.



Think tank

Andy 'DevPac' Pennel, HiSoft's leading programmer, reports on the future of the Amiga in Europe, as seen at the recent Frankfurt Developer's Conference.



The first European Developer Conference was held way back in late 1985 in Karlsruhe, so the second conference was somewhat overdue.

Commodore notes there are one million Amiga worldwide, with a staggering seven times more A500s than other Amigas. Future software plans centered on Kickstart 1.4 and various future hardware add-ons were discussed, though queries on the A3000 elicited a stony silence.

Super Amiga

The new hardware that I expect most is the A5000 card which contains a 68000 processor, 2Mbytes or 4Mbytes of RAM and a 68011 maths co-processor. This, combined with a fast hard

disk and an A2000, is a very impressive piece of kit, as we were all to discover later. The A2000 is available now; other forthcoming hardware was also spoken of. To respect Commodore's wishes I can't give too much away, but main development areas are higher resolution monitors, very powerful video hardware and a way for A500 owners to upgrade their machines without buying an A2000.

The enhanced chip set (ECS) was also discussed. The chips in question include Fast Agnus, Denise and Gary. As well as doubling the 512k graphics chip memory limit, they offer new frame screen modes though some require a very expensive monitor and combine PAL and NTSC

modes on one chip, which existing Amiga models will be able to benefit from the ECS was not stated.

Works today, won't tomorrow

With the increasing variety of hardware and hardware versions in the Amiga market, software compatibility was often discussed. Certain programs are likely to malfunction on the more powerful Amigas - the main culprits are assembly-written boot vectors on games, and Sam was used as the example others should follow. The Striplighter 2 boot vectors work on all Amigas, present and future. Programs which directly access the ROM suddenly stop working under 1.1, though most programs that do are apparently immune.

Jamming sessions

The conference notes make the complete ROM format manual seem pocket-sized; they came in the biggest ring binder I've ever seen. Most of the speakers were Americans who have worked on the current Amigas and are now working on the next generation. The first individual speaker was Jim Macrae, the Californian responsible for Intuition since version 1.1.

One strange/unpleasant minute session was presented by Motorola Germany which examined the existing 68000 chip family, the 68000 series of RISC chips and gave some details of the 68040. The OAD is a much faster version of the 68000 with built-in floating point and lots of cache.

The most popular area was the computer room; an area with around fifteen tapeheads A2000s and a similar number of public A500s (that is, machines with only a RAM and floppy). The 68000s and fast memory made

■ The latest A5000 Amiga disk contains a 68000 processor, 2Mbytes or 4Mbytes of RAM and a 68011 maths co-processor.

native looks quite a few programs, mainly games. Despite the presence of all these machines and the numbers of people using them, I didn't hear of one reported virus during the conference. The common problem was typing on a German keyboard. By a *coincidence* to see what I meant Commodore themselves showed us pre-release hardware or software during the conference.



■ The venue of Frankfurt, West Germany, was chosen for the second Amiga Developer's Conference for a simple reason: Germany is the biggest Amiga market and Frankfurt is the home of Commodore Germany.

One tuning in entertaining young German turned up and started selling complete 1.2 ROM disassemblies. The listing is heavily commented, though in German. One floating around was a pirate copy of the above 1989 ROM format manual (issue 2), worth to its author's amusement.

WORKBENCH 1.4

Most Commodore-originated software talk was of Kickstart 1.4, though it is still very early days yet. A few things will be in there for sure: ECS support and other new screen modes, fixed window changes in Workbench, and the inclusion of color fonts and FastPorts to ROM. To make room for all this, the rest of Workbench will come out of ROM and be provided on disk material. If you thought Workbench disks were full now, you ain't seen nothin' yet if a standard can be decided on them, at least, a file repository will go in as well. Oh yes, and some bugs will be fixed too.

There was a little talk of Kickstart 1.5, mainly concerned with fonts and then programs will suddenly stop working unless developers follow the rules. Much of this is caused by less than ideal code in the original graphics library which is now being corrected.

■ No, it's only a label! You'll be lucky to see Workbench 1.4 this year.





REVIEW

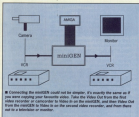
MINIGEN

Have you ever wanted to take a video recorder and turn it inside out? Add Top-of-the-Pops style titles to your precious recordings of the Totnes Tornadoes in concert? Or point a flashing arrow at the blushing bride in a wedding video? KEVIN COVERDALE checks out a new budget genlock to let your Amiga do just that.

MINIGEN

£110.05 ■ All Amigas ■
Applied Systems
Developments Ltd,
Queensway Business
Centre, Brigg Road,
Southorpe DN16 3RT
(0724 280222)

Nearly three years ago Channel 4 found out our small screens with *The Chair* (Show, a pop programme which used a system that could be linked up with a computer and display computer graphics) or test on top of a video image. The system which they used to perform this task was a genlock.



As the years have gone by, so costs have fallen, and now that same technology is available to all Amiga users at around £100. So what can you actually do with it?

Let's go

For £99 plus very cheap 'let me you get a miniGEN which is the genlock hardware, an Amiga floppy disk and a four page manual which tells you how to set up the miniGEN, and a few technical details about the unit.

Making the connections is not easy but once all these have been checked it's then a case of having to boot up the demo disk to check that the unit works properly.

Supplied on the disk are four programs two of which are test cards - one in low res and the other in high, as well as two other programs which consist of a rolling demo and a simple video title.

The test program itself displays a test card (similar to the one they use on the BBC) on the screen and once miniGEN's selector switch has been moved to its 'Mixed' position, the picture from the video will be displayed in the centre of the card. (That's it at

the connections are correct to and from the miniGEN).

The first one of the test card programs is a rolling demonstration which starts off with 'miniGEN' in large letters at the top of the screen, and below are the addresses of both ASD and Headline the software house who wrote all the programs on the disk. The second program is more interesting, being a simple video title similar in style to Zeno's 70/last Upon loading, the screen clears and the program waits for you to press a function key. When a key is pressed up pops an animated title over your video image, at Jan's First Birthday, Birthday Mania along with a few other all-American favourites. When you're bored of pressing the function key, escape into you leave the program and go back into wait bench.

The software options

You don't really need special video software to be able to mix video graphics and Amiga stills. By using Deluxe Paint you can have a go at producing some video titles, the



■ The miniGEN itself looks very similar to the designer's modular case but the noticeable differences are that it's been modified in a shade of light yellow and has a small toggle switch on the top labeled 'Mixed', 'Generator & Monitor'. At the back are two phone sockets, one marked 'Video Out' and the other 'Video In'.

cheap way.

First of all it's a case of loading up a copy of Deluxe Paint and then doing a Clear Screen to leave the black background as it is. The reason for this will become obvious in a little while. Having decided what title you want to put onto your video, go into the ST Amiga Format logo, you then select the colour of your choice. For the Format logo you'll need to select certain shades of pale blue, deep red, white, deep-blue and deep grey.

But wait! The magazine's logo uses black, not deep grey! You're asking yourself. The reason of course is that the picture background is black, so deep grey is the closest you can get while still being a distinct colour.

Now whenever you display this picture via miniDV onto your TV, any black areas of the Amiga's picture are replaced by the current image the video recorder is showing. So if you tried to put pure black into a title or screen dump, the result would be that those areas would not be black at all, but tiny animated video images. To compensate for this you have to use dark grey instead of black in your Amiga artwork - annoying, but not too noticeable really.

In action

One of the many good points about miniDV is that you can flick between displaying your Amiga screen only, your video image only or the generated combination, all on the one TV screen.

For instance, if you are trying to draw a title in Deluxe Paint and you need to line it up accurately, you can set the video recorder going and flick between video and Amiga displays when you adjust its position on screen. This is done by using miniDV's selector switch on its 'Menu' mode, bringing up the first frame with Deluxe Paint and then flicking back to the 'Displayed' mode.

Once you're satisfied with your title and have saved it onto disk it's then onto the tricky bit. How do you get the titles which were done using Deluxe Paint onto tape? There are a number of ways in which this can be done - either by purchasing a video editing package (Deluxe Video, Deluxe Productions), or Fantasticon or by getting hold of a skeleton program.

Skeleton programs are about the cheapest way of using a garlock system to tape your videos. Just make sure the Amiga is displaying a screen totally black apart from the titles to be displayed, and then arrange your skeleton so that you can progress from one screen to the next at the press of a key. Switch the garlock to 'Menu', and use the skeleton manually to coincide with the relevant parts of the video. Record the garlock's output on



After humble Format logo loads towards miniDV screen. To check out the skeleton we first took a simple Deluxe Paint screen of the logo...

A. Then, with nothing better to do than watching TV adverts, we took this signal and processed it for the most dramatic transformation ever...



A. Then, what more could you want? ST Amiga Format goes into the movies. Get your heart out Every Wigan.



a second video recorder, and that's your uncle.

With Deluxe Video, Deluxe Productions and Fantasticon there will be relevant sections in their manuals for using a garlock system. These more sophisticated programs usually allow you to write a 'mini script' to ensure that the Amiga screen displays synchronously with your video. You can then slow down or speed up the rate at which the titles are displayed.

Your own studio

You've seen the Chart Show and you've decided to set up your own video editing studio. How much would it cost you? You're three quarters of the way there because you already have an Amiga. All you need now is the garlock, two video recorders and some controlling software. We'll start off with the garlock.

Prices for garlocks vary considerably. miniDV is the cheapest, then prices rise to £260 for the Rendal 8602 (Amiga Centre Scotland), and if you think that's a lot to pay for a garlock, things get worse if you want a broadcast-quality unit - you would

probably end up paying over £500.

When buying a garlock think about what you are going to be using it for. Are you going to set up your own video company or are you just using it to title your home videos? It's not worth buying a £260 garlock only to get 'Hello, it's me on the telly' onto your favourite video of you in front of your computer.

Let's say you've got the garlock, and you've after two video recorders for the playback and re-recording. The thing to remember here is that video comes in all types of specifications

WHAT NO STI

At the time of writing, none of the Amiga gear from Fantasticon companies had produced a version which was an add for our humble brand the ST. But there are prototypes which are on test at the moment, and these should be with you in the near future.

WHAT NO LEADS?

We feared that there are no connections leads supplied with the miniDV. The reason, apart from status and cutting, is that there are so many different types of miniDV on the market. The cost of producing miniDV tapes leads would put the price of the unit up, and we don't want that, do we?

But there is a solution. Just pop into any DV video shop and explain what you want to them. Or if you are an electronics whizz, why not build the leads yourself? All you need are two screened leads terminated one end with a phono plug and the other end with a connector which will fit your video or Lullababy.

WHAT DOES IT DO?

To get garlock up and running as a system, you need have a machine which is capable of producing an RGB signal from one of its rear ports. (Both the Amiga and all products that appear from their 'sister' units are standard). The garlock then takes the computer's image with the video by replacing everything black in the Amiga's image with the live video picture. You get an effect which looks as though the Amiga screen has been superimposed on the video image.

Technically, because the refresh rates of the computer and the output device are completely different, the garlock has to alter the speed of the input's refresh rate to coincide with the computer's. Once this has been done the two images are then mixed by one of the video chips inside the garlock, and this is then sent to an output device (a second video recorder or monitor).



RECARE

ANATOMY OF A VIDEO



■ The minigen is reasonably cheap and so such, the quality wouldn't really be good enough for use in broad-casting, however, for adding titles to your theme movies, clicking messages over the top of your favourite episode of EastEnders or adding your name to the cast list of Neighbours, it's ideal. To search out we put the minigen through its paces under control from Deluxe Video. Here are a few shots from the resulting over-winning production.

and prices. Don't go out and get a 1299 system which can do every-thing. Instead, try to get two simple videos which have a clear record and playback picture, a good freeze-frame, and if possible get them with "SCART" sockets (a standard socket like the Amiga uses to connect to its monitor).

For this review, two Amstrad VCR6008 video recorders were used to test minigen out, with very pleasing results. A word of warning though: don't use Amstrads 1982 or 1983 "Televiewer" for same strange reason the picture quality from the Amiga was terrible, and while playing back a previously recorded tape, the picture was always bent to one side. These machines are only for home video use and not for use with the

Amiga or ST.

Once the hardware has been sorted out, what sort of software should you use that will run with minigen and give good results?

There's a real range of genlock software which is 100 per cent compatible with minigen, and the range is growing very quickly. Some of the more popular commercial titles for the Amiga are: Dana's TVTint and TV-Shot (PB Marketing) - both are £39.95; Ambrosian Amiga Games (Softland) - £34.95; Electronic Arts' Deluxe Video - £49.95; and EA's Deluxe Productions is one of the more expensive (packet) software at £19.95, needing 1MB to run as well.

Once again the software, like the hardware, needs careful considera-

tion. Ask yourself, "What do I want to do with the genlock?" Do you want special effects, or just to title your home videos?

For video titling use TVTint. This is ideal for that particular area, but if you want to do wipes, flips and other special effects it's worth looking at Deluxe Video or Productions.

The final marks

Minigen's manual could be made considerably more user-friendly by including something like a step-by-step walk through guide on how to set up the unit and get it up and running, or even better a rolling demo on the disc, giving details on how to wire up and use minigen. But instead, all you get is four sheets of photocopied paper (one of which is photocopied twice) on how to set the unit up with a little better technical information than you'd find in most manuals.

Another point worth mentioning is the fact that there's no information on how to use the disk which is supplied with minigen. It takes quite some time to figure out what the programs are used for and although the test cards are useful diagnostically, the other programs are demonstrations only and seem to be on the disk simply as adverts for Amstrad.

The minigen itself is a well built unit and works efficiently with Electronic Arts' Deluxe Video. The only problems with it were that the heat which was coming from inside the minigen seemed to make the case a little too warm for comfort, and the size of the video menu toggle switch was a little too small. It might be an idea for ASD to put a larger toggle switch into the unit and add a couple more vents to the case so that it can cool down a bit better.

Overall there was very little to be faulted with the unit apart from the manual and the disc, the price makes it a winner. I highly recommend it if so much I bought the company's Kiosk, I'd just write for buying myself one and leave all the hard work to the kids at ASD. ■

Features

1 2 3 4

performance

1 2 3 4

ease of use

1 2 3 4

reliability

1 2 3 4

format value

1 2 3 4

MINIGEN

for

- It's reasonably cheap
- Easy to use once you've managed to set it all up
- Vast range of software already available.

against

- No leads supplied
- Poor manual
- Poor instruction disk

THE PROFESSIONAL DIMENSION

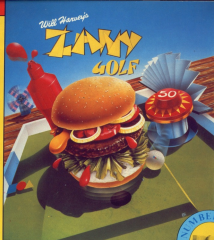
On Channel 4's Chart Show, a number of Amiga 5000s are used along with broadcast quality genlocks and about 10-20 megabytes of memory. These are used in conjunction with a video mixing desk with many other extras which are needed to produce the finished effects on the programme.

The difference between a "broadcast quality" genlock and a standard genlock are that one costs a lot more money than the other. The broadcast quality version can produce picture-in-picture and other special effects. It has a

higher resolution so that it can be used in conjunction with television cameras and video mixing desks. There's one place though where you'll never see a broadcast quality genlock, and that's your local computer shop. That's where you order it especially (which is likely means you hire the manager's best friend for the job).

The only place where you can see the type of genlock to use is within the broadcast industry (television and advertising companies) who have the money to purchase and use them.

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T'R I A 'D



V O L U M E • 1



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HARDWARE



■ Inside and out - the Multiface, IBM's Spectrum interACE, began life on the ZX Spectrum five years ago. Since then it has mutated into the Spectrum Plus II, Plus II and Amstrad CPC. Now it's available for the ST. The hardware widget does a similar job to all computers: it lets you fast-ship programs in memory and then transfer, alter or save memory contents.

MULTIFACE ST

MULTIFACE
\$49.95, £10 extra for
Disk Manager ■ All
STs, Amiga version
due ■ Romantic
Robot, 54 Deanscroft
Ave, London, NW9
8LN (01-200 8870)

It's an escalating struggle - pirate versus copy protector - which benefits nobody in the end. You lose out as you have to pay inflated software prices (protection evil) and you're deprived of backing up previous programs. Both hardware and software solutions exist to counter the backup problem, but frankly these devices are dress-up piracy devices whose success rate is very low. Enter Romantic Robot's Multiface. Yes, it copies virtually all software. No, it can't be used by the

Something wonderful has happened... Romantic Robot has released a gadget that can freeze almost any ST program, games and all. After that there's no limit to what you can do. RICHARD MONTEIRO goes hacking.

uninitiated - the Multiface hardware must be plugged in before you can install saved programs, so only you can use it.

Multiface ST is a matchbox-size device which fits into the Atari's cartridge port. Apart from a push-button and a wire with a connector for plugging into the ST's monitor socket, there's nothing appearance-wise to get excited about. The connector for slotting into the monitor socket has a through port so you can still hook a monochrome or colour monitor to the computer. The cartridge interface

has no through slot which means you can't have other gadgets attached to the port at the same time as the Multiface.

When you switch on your ST the Multiface alters the initial startup sequence. A small menu appears at the bottom of the screen before the normal GEM or game startup process is allowed to begin. From here you can boot either from drive A or drive B for a hard disk assuming that you have one fitted, jump to the main menu, or enter the Disk Organiser. All the Multiface's software is held on

LOOK OUT

An Amiga Multiface is underway. Already the Topolite has been written. Also Goodwin's Romantic Robot's MD is hoping for an April launch. The ST Multiface will be enhanced during the year. Possible enhancements include better success rate, reshaped memory editing, bit register within the Disk Organiser and much more. There's also the discussion ROM to look forward to - this £19.95 addition will let you disassemble programs plugged with the Multiface.



HACKING TIPS

Many games require you to enter a key to get to high or low levels. Games like these are stored in ASCII. Take frequent backups, you are told not to password. EVER. Simply search for the occurrence of ASCII between memory locations 0 and 1FFFF (lower and upper memory limits on a 520). When you find the password, you will discover the other passwords are listed in the same area. This technique will work with many games. Lines are included. If you are given three lines then search for the byte 00 - you will find many. Change each one individually and see if it affects your file.

Dirty details

Pressing either 4 or 6 subcuts a disk in the corresponding drive. From the moment you tap the key, the ST takes control and behaves as if the Multiface were not present. It remains hidden until you press its magic button. Once any application, game or utility will stop at this point and control will pass to the Multiface. Programs can be stopped at any time, so you could play to the 12th level in *Alienoid* if or enter the city's transactions into Home Accounts before hitting the button.

When you press the button the screen turns black and white and there is a pause, anything from under a second to over 15 seconds. The length of the pause depends on the amount of possible compression; compression is necessary because the Multiface must save the 66000 registers, sound, screen and keyboard parameters along with the relevant bits of RAM. Additionally the device requires some screen RAM for displaying its menu.

Occasionally, when used with a 520, the Multiface won't gain control of a program. The usual compression



■ Flying Shark running normally - the Multiface is making its presence known.



■ General Multiface starts to compress the Flying Shark data and keeps track of 66000 registers, sound, screen and keyboard parameters.



■ Inside Flying Shark. What happens if those bytes are changed...?

contortions will be observed before you're thrown back into the program. This happens only if the Multiface can't find enough breathing space - that is, enough memory for it to list alongside the resident program. 1240s and Mega STs don't suffer this problem.

Romantic Robot's device works by interrupting the currently active program and telling the processor that it is the most important task. However, a few games prevent this... at present.

Of the programs which we tested with the Multiface we found *ByteIt* (Deal) than *Allen*, *Planet Street* (Patches), *Q4* (Roon), *Heroes of the Lance*, *Ripcord*, *Spectrum 512* and *Superman* to work on any ST. *Flying Shark* and *Probot* could only be loaded on a machine with more than 1Mbyte. *Starfighter* and *Thunderbase* couldn't be stopped.

It's cheap

The options *Save*, *Load*, *Format*, *Test* and *Print* are all available from the main menu. There are also facilities

for mounting a halted program and viewing the screen at the point where it was stopped (great for screen-shots).

Save into you save a snapshot of the computer memory or the screen at the instant the button was pressed. The image can be saved to any disk drive - supporting 512K of RAM data along with screen, sound and keyboard parameters is tough-going on a single sided disk; for this reason it is possible to save over several disks. You could, if you were inclined, save the file over 254 disks!

Choosing *Test* works you into a memory editor. It's a hacker's dream with facilities for moving quickly to specific RAM or ROM addresses, scrolling at various speeds through memory, editing any RAM location or 66000 register, editing, printing or viewing memory in hexadecimal, ASCII or decimal, filling an area of memory with a pattern of up to 10 bytes, searching for and replacing a sequence of 10 bytes or 20 ASCII characters, loading or saving a block of memory.

Finally there's *Print*. This dumps the screen to an Epson compatible printer.

Game over

There are loads of memory monitors for the ST, but how many will allow you to inspect heavily-protected software files? The Multiface is unique in being able to freeze almost any program and then let you rummage around in memory checking whatever you like. This makes it excellent for finding passwords and poking holes inside games.

There aren't any serious complaints about the Multiface: the search and replace is a bit slow, the editing keystrokes are poorly chosen, and the manual lacks the in-depth information necessary for newcomers to memory editors. But apart from that, the device is at an incredible price of minority.

For purely backup purposes the Multiface is definitely in a league all of its own. While it doesn't offer (or even claim) a 100% success rate, you won't find a software package or hardware device which can cope with as much as much as Romantic Robot's clever little gadget. ■

DISK ORGANIZER

If you add £10 to the Multiface's £49.95 price you get the Disk Organizer software (which is available from the Multiface's software menu) on the cartridge instead. This software sits on ROM alongside the Multiface menu. Disk Organizer is a file management system that lets you copy, delete, rename and sort files and folders. You might expect that OEM already provided these facilities. Indeed it does, however, the Organizer has benefits...

All available memory is used as a buffer for the copying. When doing multiple file copying as many files as possible are streamed into RAM before you're requested to swap disks - great for single disk drive machines. The entire directory of the source disk is kept in RAM making it unnecessary to visit the disk each time a folder is opened or closed. The combined result is faster copying and fewer disk swaps.

The total size of selected files and folders - and the amount of free space on each disk in each drive - is shown. This means you can list abilities or not there is sufficient space on the destination drive before you start copying.

This can be displayed in the order in which they appear in the drive directory. This can be handy for working out the order in which PRC files are executed inside the AUTO folder.

for

- Lets you inspect, edit or save almost any program
- Powerful memory editor
- View contents of the ST's RAM
- Disk Organizer has built-in file management tools (RAM)

against

- Poor editing keys
- Manual unhelpful to beginners

Features

0 0 0 0 0

performance

0 0 0 0 0

size of use

0 0 0 0 0

memory

0 0 0 0 0

format value

0 0 0 0 0

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Formatting Headers & footers
Help Keyboard macros
Line drawing Line spacing
Printer support Print style

Program mode suppresses formatting, auto-indent, set left margin will print proportionally spaced, right justified text
Proportional text suppresses formatting, auto-indent, set left margin will print proportionally spaced, right justified text
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Rule lines left/right margins and normal/decimal tab stops
Spelling checker check from list or current text, set up type a afterwards, suggests alternative spellings, words set
Symbols full character set available on screen, character symbols may be redefined
Time and date time shown on screen, use date within document
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Word count quick count of any text, whole text or just a block
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THE INTERACTION GAME



FUTURES

The need to communicate quickly with computers is becoming ever more apparent. The businessman has long known that time is money; typing instructions at a keyboard is no way to make money or save time. Speech is the fastest method of communication. Take that one step further - thought - and apply that to computers. Things really will start moving. The days of the keyboard are numbered as **RICHARD MONTEIRO** discovers.



■ Go ahead, make my day. *TopGun* is the most powerful fighter plane in the world. Big, and able from its tail-fining forward cannons (thought I should I know minutes or minutes away they would blow your head clean off)

Head-up displays, optical linked tracking mechanisms, thought control? (the systems that Clint used to control his plane in the film are not entirely science fictioned. In fact, advanced methods of interfacing to computers are already here, and look set to revolutionize the way we work.

Think what you're thinking... have I told all of 'em or have I got one left? You know, in all this confusion I forgot myself. Tell me, punk, do you feel lucky? Well... do ya?



If you want your computer to do something other than store back blindly, you must inform it of the program you would like it to carry out. Obviously, really, but also tedious. Think of all the time you waste moving a pointer, clicking on icons and dragging objects. And that's just to load an application! Once inside the package, there are countless keystrokes or mouse hits to traverse before you can get the software to do what you want.

A form of input is required that removes the need for thinking about mundane, non-protective tasks like which icon must be clicked to get the machine to do job A, which keys must be pressed to enact job B, and even which drive must be selected to save job C.

Suppose you use a word processor for an hour - between 30% and 70% of that time will be wasted moving around menus or pressing key combinations. That figure can shoot up to 90% if you're not accustomed to the package. The net result is that your brain shares its time between coping with on-screen content and being creative. Creativity loses out.

WIMP environments like GEM and Windows are a great step forward compared to MS-DOS, CP/M or - going further back - punch card. WIMP systems are designed to remove as much of the unnecessary keyboard banging as possible. But there's still room for improvement. All there ever comes a time when the keyboard can be dispensed of! Still there comes a time when you can speak, or simply think, and a computer will carry out your demands!

Back in time

Very early computers were huge by today's standards and consisted of vacuum tubes and switches. One such machine was the ENIAC circa 1946 - a 30-ton monster with 17,468 tubes and 5000 switches.

SOCK IT TO ME

The first required use of punch-cards in machinery was for controlling the Jeopardy game in the early 1800s. This was designed by a Frenchman, Joseph Jeopardy, and it could even extremely complex patterns. In much for Jeopardy's invention - his ended up being obscured in the 1800s by workers fearful that his device would leave them out of a job.

WHAT THE QWERTY!!

Most new machine interfaces are designed to increase the speed and comfort of the operator - but the QWERTY keyboard layout are all set on our computers is a bit different.

When typewriters were invented last century they were slow mechanical beasts, and typists just used the fast for them, with the result that the key from kept jamming. The key layout was changed to deliberately slow typists down - hence the infuriating perverse nature of the layout.

A more alternative system is the Dvorak keyboard (no relation to the composer). This puts the keys in much more ergonomic places and has say it can double typing speeds once you're used to it. But since it is no mainstream, no vocational colleges will teach Dvorak typing. There's progress for you.



RAM, of course, wasn't in existence then. Programming the Electronic Numerical Integrator And Calculator was a nightmare; the user had to change the optimal wiring manually - in much the same way as a telephone operator rearranges the plugs in a switchboard - to supply the machine with new calculations.

Verbally communicating with machines didn't get any easier. Well, it couldn't. Computers started to appear with keyboards, albeit less-abstract legends. But these eventually melted into QWERTY keyboards that we all know and... have to use.

The QWERTY keyboard is still the most widely used device for talking to the computer - even after 60 years of innovation. Main, systems, graphics tablets, touch screens all have been responsible for a migration

away from the keyboard, but the process is unbelievably slow. Operating systems have to change radicals before the keyboard can be shunned. It is far less taxing to roll an object over a desk surface, wiggle a stick in any direction, or click a mouse button than it is to tap something with over 50 keys.

Play on states

Talking to machines to get them to perform your desires is nothing new.

IT'S IN THE OPERATING SYSTEM

Operating systems are in place for the way we interact with machines. When OSs are command-line based (ms, IP-16, MS-DOS, Unix, AmigaDOS). The trouble with CLIs is that a lot of obscure commands are required to be typed in to do the simplest of tasks. For instance, if you use AmigaDOS and wish to copy a file from disk A to RAM disk you could type something like `copy c:\file1.doc a:\`. The equivalent operation could be carried out the Windows-style by dragging the required file icon onto the RAM disk.

More operating systems aren't going to change radically in the next few years. There's the transparent operating system fad, but that's not going to move you away from the keyboard. What's the silver bullet is that it can take an ordinary program (process) and distribute it among several transparent processors.

One recent development is the OS in the Linux computer system. This allows you to communicate with the machine simply by writing commands into a special pool. There's no keyboard. A typical WIMP

system is used, when WIMP input is required a pop-up QWERTY keyboard is available. The machine is fully portable and very user-friendly.

Jeysticks in particular take more than their fair share of stick. It's hardly surprising considering the origins of some of these gaming-playing adjuncts. There's the stick (it's not with a cursor pad on one end and a firing button at the other), the joystick (a hand grenade-shaped thing), the trackball. The last really is useless.

Ray track balls between add a plastic steering wheel with their Porsche racing game for the Spectrum. This great device used to slide across the top row of keys depending on the direction you turned. However, the winner of the most cross-input device goes to the 3-D track Ball Concepts who created the Trackball. This incredible gadget consisted of a plastic ball on which lines across the central top of the keyboard. One this by a small wheel. The idea - yes, you've got it, was to ride the wheels using your finger tips.



Although the Microsoft features free keys, you must learn a completely new method of typing - almost as easy as learning a new language. By pressing certain combinations of keys you can produce different characters.

Continued on page 26

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Indeed, the Mark III clocked back to the early 1960s. The speech recognition process involves grabbing sound waves in waves, storing the sound and comparing any incoming sound waves with whatever is stored in memory. Simple if it may sound, simple it is not. Huge amounts of memory are required to store a significant number of sampled instructions and high processing speeds are needed to cope with both.

OH THOSE MAGNIFICENT MEN

Among the brilliant input innovations are a number of keyboards - complete business ideas that failed almost before they hit the drawing board. There's a look at a few of the creative ideas that have made the computer industry what it is today, an interesting - if not amusing - place.

Remote control input devices were at the top of our list. Applied provided the greatest amusement with their Infra-keyboard PCs. If anything got between the keyboard and the main unit that data would get lost. Perhaps more worrying was the fact that when two or more machines were in the same room, trouble was often experienced. You could be typing away at your machine only to find your text appearing on a machine belonging to someone else. Remote control mice have also been tried... and, largely, killed off.

Joysticks in particular take

more than their fair share of stick. It's hardly surprising considering the design of some of those commanding joysticks. There's the Stick (a rod with a section just at one end and a long handle at the other), the Terminator (a hand grenade-shaped thing), Tronstick. The list really is endless.

Wye back Spide Software sold a plastic steering wheel with their Formula racing game for the Spectrum. This great device used to slide across the top of one's knees depending on the direction you turned. However, the owner of the most creative input devices goes to the distant New Hampshire who created SwitchStick. This incredible gadget consisted of a plastic fulcrum which fitted across the central key of the keyboard. Over this lay a small cardboard. The idea... yes, you've got it, was to use the mouse using your finger tips.



■ Even after 10 years of existence, the mouse is still the most popular input device after the keyboard. IBM can tell you a designer mouse, with anti-throw casting, if the fancy takes you.

ing large amounts of data.

The relatively simple procedures of storing and comparing sound waves is old hat. Recent speech recognition techniques smooch it. Not only must the software be able to match incoming waves quickly and efficiently, but it must also be able to guess what the operator is trying to say when several words come in quick succession.

For some time the American Air Force has been working on a retinal tracking system (RTS). At present this device comprises a huge helmet which the pilot wears. All important instrument readings are displayed on the inside of the helmet so that the pilot can keep tabs of the aircraft's progress while looking elsewhere - at the enemy for instance.

The movement of the pilot's eyes are tracked by the security in the helmet and relayed to the craft's computer. In the event that the helmet assumes that the pilot is looking at a flight path of another plane, then the aircraft will go into pursuit mode and follow whatever the pilot is looking at. Naturally this sort of technology has a long way to go, and is still in early development.

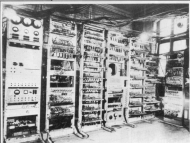
An offshoot of RTS technology is a device for long distance drivers that fits to glass frames and checks to see that the driver's eyes are covered. If the device discovers that the driver's eyelids have drooped, an alarm is sounded. Effective.

Shouting To the Future

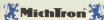
Very exciting things are going to happen in the next decade. With memory in personal machines increasing rapidly it won't be long before a speech recognition OS will fit into games consoles. Imagine that instead of exercising your fingers, your vocal chords will take the punishment.

And after that Thought enters it of course, and then (and only then) do you direct your thoughts towards the computer - or rather it reads your mind - and then it carries out your wishes. The machine would need to differentiate between instructions directed towards itself and passing thoughts, reproducible and unrepeatable say links. But that's something for the inventors of the system to worry about.

Both discount the possibility of thought-controlled devices; it's been portrayed in films enough times. As you know fiction often turns out stronger than fact. Probably the best known example is *Twelve* when Michael Landon, played by Clint Eastwood, steals a sophisticated thought-controlled machine from Soviets. Not only did Clint have to concentrate hard to get the plane to do his will, but he also had to think it himself. ■



■ After a paper was published by John von Neumann in 1946 describing how to build a computer that could store a program, the idea was at Cambridge University had (ESAC) while Manchester had the Mark I (quite loved alone). The Mark I is generally credited with running the first computer program on the 21st of June 1948. Consultant to the project was Alan Turing, veteran of the BBN wartime codebreaking team.





PC DISK FORMATS

Transferring software between ST and PC is easy, as long as you have access to one of the newer PCs with a 3.5" drive. As long as you format a disk on a PC, then load ST and PC can read and write to it with their normal file-copying commands. The PC can't read disks formatted by the ST though.

GEM'S ON DOS

GEM is available on the PC as well as the ST, though in the former case it has to be loaded from disk each time you want to use it. It runs under PC Dots, though there's a lot of disk swapping, and you can get a good idea of the speed overhead caused by the emulation, by comparing the two versions.



IBM PC EMULATION

Although the ST and Amiga have a lot going for them as computers, in their own right, there are some things they can't do, like running many of the major business software packages. This is because by far the largest range of software is designed specifically for the IBM PC and its clones.

PC DITTO
£79.95 ■ All STs ■ Power Computing, 44a Stanley Street, Bedford MK41 7BW (0234 273000)

This software emulator for the ST is supplied on a single 3.5" disk, with a thin but adequate manual. A configuration menu into which you select the type of PC screen layout or mouse, the number and type of disks and the type of PC should the program should emulate. The colour emulation is only VGA, 640x480 pixel resolution, which means for the most part any graphics will only appear in black, white, cyan and magenta.

You don't need any additional hardware to run PC Dots, as the program will happily use your current monitor, serial and parallel ports and disk drive. The system expects the disk drive to be single sided 360K, the PC standard. If you have a double-sided drive fitted to your ST you can purchase MS-DOS to read that too.

Your main problem is to get hold of an MS-DOS boot disk. Since this is copyright PC software, PC Dots doesn't include it. You'll have to find somebody with a PC and, er... borrow it.

The first thing you notice about PC Dots is that it's very slow. This is hardly surprising, considering how software emulation works (see the box). In fact using the Norton 86 program, which is commonly used to

ANYTIME YOU CAN

If you can't beat it, emulate it! We all know the ST and Amiga are the best computers you can get - but once in a while it would be nice to be able to use the vast range of software around for the other machines. With only a little effort you can get IBM PC, DEEB and MACINTOSH software up and running... in many cases better than the 'real thing'.

access the speed of PCs, the ST with PC Dots clocks in at 0.3, in fact this one third the speed of a standard PC/AT.

In its basic, PC Dots runs virtual in any piece of PC software which fits in the available memory (most PCs are now supplied with at least 640K, so a 1940ST or 486 is recommended). Most of the big-name programs like WordStar, dBase and Lotus 1-2-3 are listed as working, and we tested several (preferably memory resident programs like Desk Accessories under 586) without trouble.

PC Dots is a compromise solution that will suit for certain jobs but not for others. If your main task is not processor intensive, for instance, you intend to use your ST to word process, then Dots runs tolerably quickly and will run most of the software you're likely to need. If you thought about running graphics-based PC packages, it's too slow to be useful.

Simon Williams

PC DITTO	
features	4.0
performance	2.5
ease of use	3.0
manuals	3.0
format value	3.0

A2085 XT BRIDGE BOARD
£697.20 ■ A2085 only ■ via Commodore Business Centres (ring 0628 770088 for your local)

The Bridge Board is Commodore's attempt to make the Amiga a truly multi-purpose machine by running PC software too. It is effectively a complete PC on a card that plugs into your A2085.

For your money you get a 68085 PC processor board with 512K of fast 6.25" disk drive which fits snugly inside the A2085; and two fully complete system disks for booting MS-DOS v3.20, with 600 pages of comprehensive manuals. Installation involves taking your A2085 apart, and is not a simple process - get a dealer to do it.

To 'run' the Bridge Board, you start the Amiga normally and click on icon in the PC drawer. At this point you have to put the 5.25" MS-DOS boot disk in. All menu output appears in a standard AmigaDOS window on the screen, which can be moved and closed like any other. The Bridge Board runs in mono by default, but you can also work in 16 colour mode, or it should be EGA compatible.

Because the Bridge Board is a PC in its own right, the clear thing is



■ PC Dots up and running Microsoft's Flight Simulator, the standard test of PC compatibility, albeit rather slowly. The extra 3.25" drive is made by Tandy (available through Power Computing, £115) and gives access to most PC software.

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that the Amiga can go on running its cool looks undisturbed in action, everything goes very smoothly. Every piece of software we tried ran, including auto-scrolling games like Bridge Board can be executed with (Dinamo) without affecting the Amiga. The Norton tests checked the performance at 1.0, exactly the same speed as a PC/XT.

However, there are two files in the content. The Norton test only measures processing speed - because the display is being shared between Amiga and the Bridge Board, performance can slow down during graphics work in either machine. Text scrolling, particularly in slow or color mode.

If you want to expand memory to 640K, use a module or several interfaces, you've got to buy standard PC expansion cards (which slot into the 68000). You can use the Amiga's built-in SCSI, memory, or video drives.

So does the Bridge Board do its job? It's certainly the best Amiga PC emulator there is, but at a price. You could easily buy a complete stand-



■ The Bridge Board hardware. You get an 8088 microprocessor, 512K of RAM, MS-DOS disks and 5.25" disk drives. The board also has an 80000 word storage in memory, printed and parallel printer ports (but not the serial port or mouse). With some effort, hard disks can be shared too. Although you can transfer files between the PC and Amiga, this needs a special program - they can't access one another's data directly.

alone PC for that much. And because the 8086-based PC/XT is an ancient standard, a performance of 1.0 on the Norton tests is still way below

today's PCs. However, it's a real and reliable one-to-one solution for anybody who needs a PC and Amiga.

Ben Taylor

TRANSFORMER GONE

As part of the Amiga 600 promotion last summer, Commodore were giving away a software (PI) emulator called Transformer. This is no longer being sold in this country, although some retailers may still have copies. In fact, it was only run purely to test (test) PI programs. There's no significant emulation at all.

As with DOS, no 386, 68000 hard disk is provided, so you'll have to copy one. On the Norton tests, it checks at 0.2 - makes PI's go ten times as fast. On an 8000 you haven't got enough memory to run real-time programs anyway.

AT BRIDGE BOARD

The PC/XT that the 68000 Bridge Board emulates is old hat these days. Modern PCs - called PC/AT compatibles - use at least the faster 8086 chip and can reach 10 MB of or more on the Norton tests. Commodore are working on an 80-type Bridge Board based on the more faster 80286 chip, the 64386, but it takes to be a couple of months away yet. The spec is an 80 Bridge Board, 1.0 MB 68000 floppy disk, 640K RAM - at £1499+vat.



■ The Bridge Board in menu and color modes. Most output appears on a standard window on the normal screen; in color mode, you get a whole new display screen. We've pulled it down a bit to prove that the Workbench screen is still active beneath it.

BRIDGE BOARD	
features	4.0
performance	3.0
ease of use	4.0
manuals	4.0
format value	3.5

MS-DOS - KILLS ALL KNOWN BUGS?

MS-DOS is the operating system of the IBM PC and all its clones. It is a command-based system where, for instance, to copy a file you type more 1000 500 10000 1000 rather than dragging icons round from disk to disk with a mouse. (By the way the IBM PC MS-DOS allows eight character filenames with three character extensions.)

The default screen mode is just text characters, unlike the graphics screen of the XT and Amiga. This means you're limited to the characters you can see, but that screen updating is a comparatively fast.

MS-DOS limits the maximum amount of memory it can address to 640K, and most recent (PI) programs use all of that. Many software companies now fiddle their way around the limit to run even larger applications.



BRIDGE OF SIGNS

Readers of old will have read of our ongoing saga to get hold of an Apple ST design. Design to enable (one day months running of 100 for the price desired). Its presence here doesn't mean we've succeeded. Commodore's marketing department insist they are well out of stock, but they 'expect' a shipment in any day now'. Thanks, therefore, to our friends Ram Image reader's (0252) 875051 (0252) 875051 for help of the review kit.

APPLE MACINTOSH EMULATION

The Apple Macintosh is the Rolls-Royce of personal computers. It's got nice, but you pay for that - prices start at around £1500 for a single disk drive main system option. If you've got a main system ST, you can get Aladin. In a whole world of DSP and design software - for a fraction of the price of a junior Mac system.

ALADIN 3.10
£200 ■ Mono STs ■ Sigma,
Trevreen House, Cricket
Hill Lane, Katelye,
Camberley, Surrey GU17
7BA (0252 875051)

Back in 1986, a program called Magi had tried to emulate a Mac on an ST - it proved more trouble than it was worth, since you needed to tap under the 'counter' Macintosh ROM chips to make it work, and even then much Mac software was incompatible. Not surprisingly, Apple dealers

HOW DO YOU DO IT?

what do emulators actually do? (hardware emulators like the Design's 80000 Bridge Board) and the STs Aladin work by effectively taking on the chip set of the machine to be emulated, and handing over control to it.

Software emulators have a tougher task. There are two problems with running software designed for one machine on another. First, the two computers may have different microprocessors. The BBC runs on a 68000, whereas the design runs a 16-bit 68000. The emulator is a program which reads an instruction from the foreign program, works out what is the equivalent instruction on the 'host' machine, runs that instruction, reads the result, and so on. It does process.

The second problem is that the two computers' hardware differs. An instruction to P000 is a value to location 12345 might point a character on the BBC's screen, but that area of memory certainly won't control the screen on an Amiga. Programs which do this kind of very low level machine access usually can't be emulated.

In fact it is that some emulators can actually run faster than the original machine! Let's take the BBC and design again: the Amiga's 68000 microprocessor and timer chip are more powerful than the 68000, and some things that take an age to do on the BBC (like filling an area of the screen with a colour) can be done with a single instruction on the Amiga.



■ The Aladin cartridge plugged into the ST's port.



■ The distribution Mac desktop as viewed on the ST screen under Aladin. The screen area is bigger and the Apple Disk II floppy icon is different - obtaining pixel-perfect icons.

ABOUT THE MAC

In 1984, the Macintosh was the first computer to introduce the user-friendly 'WIMP' interface of pull-down menus, icons, and mouse-controlled operation. The ST and the Mac was the same microprocessor, the 68000, so the task of software emulation is eased.

One of the best features of the Macintosh is its superbly spaced screen fonts which are supported by the operating system. It makes it the best personal computer for desktop publishing. The ST's cheap 6000-line screen cannot compare with the beautiful copy produced by a Macintosh print-out.

One of the biggest differences between Macintosh and the ST lies in the fact that Macintosh is a heavily disk-based computer. Because of the small 128K memory on the original Macs, instead of loading entire programs and data, accessories into memory the disk is accessed for information continuously throughout a computing session.

The Mac has much innovative and expensive quality software. Its desktop publishing programs are yet to be surpassed. In fact, it is the well-designed Macintosh software which makes a Mac emulator a worthy investment.



were reluctant to accept ST owners.

Early competition came in 1987 with a German hardware Mac emulator which possibly ran over 90% of all Mac software on the ST. The program was Aladin. The current version - 3.1 - includes a lot of Mac ROMs, which accounts for the rather high price tag. These ROMs are the old 64K ROMs, not the Mac SE compatible 256K versions.

Once you've fitted the Aladin box into the cartridge port, you get to the screen which regards the Mac system boot disk. Here you come across the biggest problem of Mac emulators. Macs have a very peculiar disk format, and the ST cannot directly read their disks. Therefore you've got to find yourself a Mac and transfer all the files you need via a serial link and special transfer program into Aladin's special hard-coded disks. It takes about 4 minutes per disk.

Done done, the performance is superb. In fact, the ST's performance is in many ways superior to a real Mac, since you have the benefit of running BBC software on the ST's crisp 640x480 pixel screen as opposed to the Mac's top 512x342 version.

Aladin also runs Mac software up to 20% faster than a Mac. This is in part because the Macintosh's 68000 CPU operates at 1.7 MHz, whereas the ST's runs at 8 MHz. Another speed improvement is that Aladin uses a special RAM disk called the SuperDisk which allows the real

Macintosh system file, which is accessed continually during most operations on a Mac, to be stored in RAM instead of on disk.

Pressing Control-Alt-Delete's allows you to exit Macintosh mode and go to Aladin's own 68000 and back. ST text and picture files can be transferred to the Mac environment (although you can't transfer Mac-type files to the ST environment).

Other features include support for the ST's clock on Wigan, both serial and parallel ports, and a generous supply of 'Pish files'. These are needed because several popular Mac programs don't follow Apple's guidelines for legal programming, and the program needs to be modified in order to run properly.

Though £200 is a bit steep, almost the price of the bottom of the line ST alone, it still is an amazing way off the price of a new Macintosh. Aladin makes the ST a truly affordable computer. The only problem is not being able to read and write Mac format disks.

Eric Sain

ALADIN 3.10	
features	4.0
performance	4.0
ease of use	4.0
manuals	3.0
overall value	4.0

CAPTAIN FIZZ

MEETS THE BLASTER-TRONS



CAPTAIN FIZZ Meets The Blaster-Trons

The message is simple: no-one else will.

It's double fun and double trouble all the way in Captain Fizz, the most exciting simultaneous two-player game you and a friend are ever likely to play. It's a whole new world of split-screen, high-speed action, as both of you take on the nasty Blaster-Trons meeting the planet Eurus.

Top, it's a tough mission: right, you might just be able to do it if between you you've got the right blend of co-operation, courage, split-foot reflexes, tactical sense... and more. The action is fast and furious in Captain FIZZ, but if you don't work out the right tactics you'll both be dead meat.

There are 10 levels of danger and relentless action to battle through before you reach your objective, the central computer that's causing the evil intrusions. You'll never get there, though, unless you put your heads together and co-operate: your buddy can't do everything, and neither can you. This is one program where even the early games are hard. So remember - unless you stand, you should you fall.

Warning: this game is impossible to beat on your own.

Two-player mode requires the two-player game

Screen Shots are from the final ST version

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PSYGNOSIS
FREEPOST
LIVERPOOL L3 9AB
UNITED KINGDOM

Tel: 051-207 0825



PSYGNOSIS



WERNICA, 1997

things owners may want to add to keep the health of Macintosh software fit. However, the idea that Covid (and - also using the original Apple Inc. Mac computer for the IT - is creating an an enhanced version for the future.

WISCONSIN NEWS

Yet another upgrade to Atollin has just been announced, and again promises around 30% by early 1988. New features include hard disk support, use of Mega II's buffer chip, full Macintosh word compatibility, a new chip in the cartridge to speed up operations and the new IIcx with the ability to use Mac System 4.1. Atollin 2.0 seems very capable to the new owners. See #708.

BBC EMULATION

Still, already find Amiga being used extensively within schools as desktop means of around the country. Most notably within the last year, the Somerset education authority had at least one Amiga installed in every secondary school. This problem is that although the Amiga is seen as the choice for art and design classes, the Amiga has still to break into the BBC dominated classroom. In an attempt to break BBC's monopoly, Commodore have released the Amiga BBC edition.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

£49.99 (£10 off to schools) ■ All Ardis ■ James Associates, Harlow, Essex, Essex, Essex ■ Mews, London W14 0JZ ■ 011-800-0860

The BBC Executive, as Controller or Commissioner would prefer, aims to be an almost complete emulation of the operating system of a model B BBC.



■ The design is common as the Modulator stage is divided of positive and negative half cycles.



■ **4. [10%] (4/50)** program making beautiful colours on the design screen with the Macintosh

NEWS FROM THE INDUSTRY

(b) At the moment, there's no way of reading **000** data from the device - although Commodore are working on it. In the first thing you will need is a lead to connect the Amiga and **000** via the serial interface. Things are not that simple, however, as the BBC uses network **00410** connections whereas the Amiga uses the standard **00110**. Most BBC authors (if you can find them!) should be able to provide you with the appropriate lead. It would have made sense if Commodore themselves had provided the **00420** to **001** in the package.

These pieces (labeled the *Designs* and *DBs*), just typing "connect" on the *Designs* and *DBs* is all the *DBAC* will get the new machines (asking, to transfer the contents of an *oldDB* disk to an *newDB* disk, the "DBSPST" command is used. For example, if you typed "connect 0 1", this would transfer the contents of a disk in *drive 0* on the *DBAC* to *drive one* on the *Designs*. Then you did *exit* and *reboot* the programs.

NEW ATTORNEYS

Although our three main studies use all commercial products, studies 1 and 2 used a more restricted list for the mobile domain (see appendix B4).

One of the best known CP simulators is in the M. Gary Elms' comes with a set of PC disks including a CP/M emulator. CP/M was a command-line operating system widely used in the '70s, and still around on Amstrad CPCs and PCs. Its main problem is getting CP/M software onto the G1 - no current CP/M machines can take 1.44" disks, so you're reduced to serial links and sparse programs again. Speed isn't too bad, since the 68000 runs several times faster than the CP/M-targeted 580 microprocessor.

On the lighter side, Sony's on ST "emulator" on the Amiga which just displays a standard ST desktop screen that crashes whenever you click the mouse. There's supposed to be an Amiga emulator on the ST, but we've never seen it and our our phones are insured by the fact that it claims to require a better to be in your ST, but was written in 1989, about 18 months before you could get 68000s.

A variety of other mutations allowed for *flav* *fla*, *CIR*, and more, but there are only 3 feeding stations where it's virtually impossible to transfer cassette cassettes from a *CIR*, *fla*, and an *fla* or *flav* that others.

micro. Nearly everything is there, the old BBC BASIC that many a computer user was weaned on, the BBC disk filing system called 'Disk Filing System' by Commodore to avoid copyright problems with Acorn) and all the different screen modes and resolutions of a sharded beast.

Any program written in standard BASIC should run perfectly on the Insulator, being aimed specifically for use in the education market, the Insulator will not run machine coded games such as Elite and Superior Software's Raptor series. The vast majority of educational software is written primarily in BASIC with the odd machine code routine to give that bit of extra turbo charging. All software written in a 'legal' manner should work, without incident.

The emulator uses a "layered" software approach. At the lowest level is the ordinary Amiga operating system, on top of which is a 68000 microprocessor emulator (the BBC uses a 68012 chip, not a 68000 like the Amiga). The BBC BASIC emulator is then loaded on top of this.

¹ *These comparisons and the following ones are based on the*

the package is a complete implementation of the BBC's infamous BASIC. The only omission is the lack of support for sound generation INTRINSIC commands. 99% of the "T3 and "C4" commands that make the operating system calls are covered by

The first thing that strikes you about the BASIC is its binding speed, which even fast emulators are slow to emulate. Programs written in BASIC run up to eight times faster under the BBC than later than they would on a BBC. This considerable improvement is made possible by allowing the BBC's operating system and disk-control hardware to handle all the hard work. When you write a program to draw lines on the BBC BASIC, the emulator passes control to the more capable hands of the BBC's graphics hardware.

If you wish to use it to run DOS software and have no intention of eventually moving over to the Mega completely, you're hard-pressed to find a choice in your BIOS. Only one machine can run all DOS software, and that's a PC. What the emulator does provide is a way of easing the pain of upgrading from the 286 to the 486.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

TO RUN OR NOT TO RUN

The *Emulator* was tested using the most popular BBC educational programs used in schools. As we've said in the main text, 'viewer' machine code programs and games like this will not run on the emulator. Below is a list of some of the programs which will work fine:

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

The Longman series of programs, such as 'Buy, Cars' Maths in Motion, 'Mindful Business' and 'Mindful The Future'

[illegible]

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performance	4.5
ease of use	4.5
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GOLD DUST

Steve Gold hunts out the latest state-side news and views. Commodore's European MD leaves, US on-line charges rise and Atari cuts its losses.

To flow free leeway among US on-line computer users has been delayed by Telnet, the packet switching company, which has raised its tariffs for PC Purists.

PC Purists is a system where modern users in one part of the US can access BBSs in other areas for the price of a local telephone call, plus \$30 a month. This saves many long distance phone calls.

The bad news is that Telnet is now "lapping" PC Purists user's accounts in 30 hours of usage a month before surcharges. Sadly, many subscribers have threatened to drop the service.

This will result in a stagnation in the public domain/homebrew software scene here in Europe, as the software channels will dry up. Telnet is currently considering the many thousands of complaints from subscribers.

familiar with MOOS, the forerunner to MOOS Prodigy, MOOS Prodigy is, in fact, a commercially-developed and expanded version of MOOS.

Further details of MOOS Prodigy from Marathon Computer Press, Post Office Box 68803, Virginia Beach, Virginia 23466-9433, United States, tel: 0100-804-480/5227 (24 hours).

Send in the Feds

Finally for the ST this month, my sources say Atari may not have the shiekles of the Federated Group, the troubled retail store

the company since its earliest days, left the company at the end of January.

I had a word with Christian Anderson, Sneyer's successor in Commodore's Frankfurt power base. He told me that Commodore UK will still continue to formally report to Commodore Europe in terms of its management. However, he revealed that the existing UK management, under the guidance of Steve Franklin, will forge a closer relationship with Irving Gould, Commodore's president in the US.

This is good news for Amiga users in the UK, since it means that the chaos of command when Commodore UK talking to the US has been shortened. This should result in the faster shipment of new Amigas from the US to the UK when they're released.

Talking of Irving Gould, it seems that his US headquarters has received indications that the Amiga is beginning to catch up on the Atari 520 ST here in the UK. This seems to be due to the Amiga's price point compared to the 520ST, which will be an increasing number of Europe-first new products for the Amiga.

On the software front, apart from the usual diet of games, games and more games, there's little to report from the US scene.

One package which have caught my eye, however, is Expressware, a \$44.95 hard disk backup and the copying utility for all Amigas.

Expressware is interesting, since it can perform hard disk backups and copy files from hard disks to floppy disks at the rate of 380 a minute. Unlike many other hard disk backup utilities, Expressware retains the same directory structure and file attributes as the original files.



Steve Franklin.

The final version, which will ship from the end of February, 1989, onwards, can be accessed from the command line interface, as well as via Workbench. Further information from Express Ware Software, PO Box 10290, Columbia, MO 65203-0290, United States, tel: 0100-314-4474-2984. ■



Prodigious talents

On the utility program side, Marathon Computer Press has received the MOOS Prodigy system at \$9995 for the Amiga ST. The program is an innovative software library, DOS manager and operating system utility package for the ST.

Describing the package's capabilities in a nutshell is tricky. It has been likened to the Norton Utilities, Norton Commander and Plan Menu packages for the PC, all rolled into one. The package supports up to 500 auto-executable programs, has a line-by-line interface language, and occupies just 42K of system RAM.

Shareware ST users may be

BUY BUY AMERICA

As with most US programs, you will almost certainly find it cheaper to source programs direct than the manufacturers.

And with credit cards being so popular these days, there really is no reason not to buy your programs direct from the US. US software houses are geared up to deal with international orders - remember that Canadian ST users have the same problems as UK ones when dealing by mail order.

claim Atari purchased back in 1987. Atari has taken the original suiters to court alleging misrepresentation as to profitability, and looks like winning.

Whatever happens, the inside word is that Atari wants out, in order to concentrate on new products for the ST series, instead of pouring money into the retail outlets as the Federated Group continues to make a loss.

Goings-on in AmigaLand

Commodore seems to be undergoing a number of management changes at the moment. Harald Sneyer, the European senior general manager who has been with

Modern living

ST users who have moved into the world of modern living with their machines may be interested to hear of new 15000 communications package called ModemKit that is creating a lot of interest on the US market scene.

ModemKit can be played in and out of the background. This is especially useful if, for example, you start a transfer and want to do something else on your ST. Other features include the ability to run programs remotely by modem. You can book your team ST to the office PC - not bad if you want to play the ST version of World's Bestman at work!

ModemKit will be available in the UK from March. Further details of the package from Innovated Software, 3828 Clark Street Suite 10, Sarasota Suite 10, Sarasota, Florida 34231, United States, tel: 0100-813-561-8734.

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DISK EXTRA



ST Amiga Format's unique dual format disk gives you the best of both ST and Amiga worlds! JASON HOLBORN digs deep to bring you the very best in PD and reader-ware from the four corners of the globe.

ST

How to the ST? See page 42 for full loading details.

30 JETTERBUG

Tryed of the lonely world of single player games? Enter a new dimension of social gaming with Jetterbug and challenge up to 32 fellow ST owners!



41 SPEAKTEX

Do you ever get lonely and feel in need of someone to talk to? With SpeakTex and an ST, you can have meaningful conversations with your ST until the man in white coats come to take you away.

39 DISKMECH

In the immortal words of Jack Traven, DiskMech really delivers. Please without the Price! Within this little program you'll find a whole host of powerful utilities that are all you need to keep your disks in top-top condition.

38 HANGMAN

What program is a powerful education tool as well as being a great game in its own right? Hangman of course! Build your own list of words on a subject of your choice. Hang 'em all! In particular like the included lexicon.

40 CPANEL

Do you feel restricted by the standard ST Control Panel accessory which can



be pretty boring even at the best of times? CPANEL gives the kind of complete control over your ST that would have made even Stalin green with envy!

41 LINEUP-4

Do you remember that classic game Control? If not? Where have you been? Whether you're a seasoned grandmaster or have never played the game before in your life, LineUp will provide you with hours of fun.

AMIGA

How to the Amiga? See page 43 for full loading details.

30 YELP!

Fans of the old Dragon 32 will remember Coder's Gerni Painting with affection. This really enhanced Amiga version features the same addictive gameplay that made the original such a hit but graphics and sound that are unrecognizable! 16 bits.



40 NEWCAP

LineUp is undoubtedly one of the sharpest graphics out anyone interested in PD and they are sure to agree. It's a full featured file editor that puts at your disposal a whole host of powerful editing facilities.

39 UTILIMASTER

Are the intricacies of the Amiga's command line interface giving you night-mares? Do you feel baffled by the buffers and pointers of the commands? With UtilMaster, you can have the power of the CLI at your finger tips without ever having to type a single command.

41 DMOUSE

Get your mouse pointer the kind of turbo-charging that would get a Spitfire to a shame.

41 EXPLODING WINDOWS

Are your Workbench windows boring you to death? They pop open, they snap close, and that's it... how boring! Make your Amiga Workbench windows collapse and expand with this fun little program.

40 WERKLEBID

If exploding windows weren't enough, here WERKLEBID and your Workbench screen will be more entertaining than a episode of Neighbours!





SHAREWARE

Many programs published on our cover disks are quite as if being loaned by their authors. Shareware is Public Domain with a difference - you can freely copy and distribute shareware software but if, after evaluating it fully, you feel it is useful that you are asked to send a donation to the author. We will often send you disks with data routines with printed documentation. If a program is Shareware, please read the included documentation for details.

DISK DOCUMENTATION

Many of the programs on ST Amiga Format disks are Public Domain. In such cases we're simply passing on their standard documentation (unabridged), as is required by the UK rules of practice. (Some of the software is "shareware" - still, as we say, on please don't blame us for misquoting!)

AMIGA

YELP

PROGRAM

By S. Wainwright

MACINTOSH: All Amigas

FILES: YELP, YELP.DOC

The land of paint brushes was a jolly place before they appeared. Every object, from sky scrapers to pebbles, was regularly painted in nice bright colours. However, last recently strange alien space craft have been landing and taking up residence all around the country. The people of Paint Brush Land are usually fairly hospitable but when the visitors refused to be painted in nice bright colours, war was declared.

Your control unit here, Barty the bot, Paint Brush astronauts. Barty is the most highly trained painting machine, trained under utmost secrecy in a high security military base. Armed with a supply of rapid drying paint, Barty must paint the ships of the alien visitors before the land starts to look unrecognisable. It's going to be a shoddy job however, as the alien visitors (that you would see) ships straining, all your ammunition in a desperate attempt to stay dull and long.

Each ship is made up of distinct blocks that must be

completely surrounded by paint before they will accept their new colour. Once all the blocks are filled, the alien craft is deemed fashionable and the alien flees from attack at your gaudy choice in colour schemes.

Getting going

You can load help by either inserting your cover disk at the Insert Disk/Insert prompt, clicking on the YELP icon on the diskbench or by selecting YELP from our cover disk menu. Click Me, if you choose to run help from the diskbench, the cover disk must be inserted with either drive 0 or (on drive 0). Full instructions are available in the file, YELP.DOC.



■ Barty struggles on in his quest to make alien space craft look seriously elegant.

ST
JITTERBUG

PROGRAM

By S. Wainwright

MACINTOSH: Colour STs only

FILES: JITT.BUG.PRG,

JITT.BUG.DOC, SHIPSET.PRG,

SHIPSET.DOC

Far into the future, the very existence of the human race is under threat. A tiny, run-away bugger has taken the task of our race, but taken too far. In a corner, robot armies and even as we speak, frag-



■ The Ship Set program. Customising the 64 Jitterbug in your hands content. The program can be used to modify the existing levels of enemy complexity and size. Once you've finished, just load up the Jitterbug game and your customised ship will be brought into play.

ments have reached the earth's atmosphere and are all set to run down on the inhabitants of Earth. On board the crippled craft are a multitude of alien life forms that unless rescued, will



■ Jitterbug is one of the first games to take advantage of the ST's unique MOD capabilities. Up to 32 players can play simultaneously by connecting their ST's together through MOD. Each player must have their own ST for use as a terminal, all of which must be connected together by MOD cables in a ring network arrangement. For example, with a two machine network, MOD OUT from computer 1 would be connected to MOD IN of computer 2 and MOD IN of computer 1 must be connected to MOD OUT of computer 2. The diagram above shows a three machine network.

be rescued alive as the ship burns up in the atmosphere. It is your job to enter the stricken vessel and rescue the alien inhabitants before it's too late. If this task seems too much for you, using Jitterbug's unique multiplayer option, you can employ the help of up to 31 other ST owners to aid you in this monumental task.

Getting going

For full details of connecting together multiple ST's, refer to the diagram and accompanying text. Even if you don't want to play multiplayer, or don't know anyone else with an ST, Jitterbug still makes a great game when played with a single ST.

You can load Jitterbug by clicking on the JITT.BUG.PRG on the desktop. After a short while, the game will load and you're off! Also included on our cover disk is a utility program

to allow you to modify the spacecraft in your hands' content. Full instructions on both the game and screen designer are included within the JITTERBUG folder.



■ Rescuing stranded aliens is no push over. Many express their reluctance to leave by flying to AH'you!

AMIGA UTILMASTER

PROGRAM
Patricio Geronzi
Available on Amigas
FILES: UTILMASTER.PRG,
UTILMASTER.DAT,
UTILMASTER.ICO

Does the Amiga's Command Line Interface completely fail you? Do you know the difference between your 'Info' and your 'Info'? If so, then UtilMaster will come in a godsend to you. No more 'What Workbench?' questions, no more 'Bad Apps' and Unknown Command messages, just plain sailing.

Designed to take the drudgery out of using the Amiga's CLI interface, how does UtilMaster do it? Easy, by completely replacing it, that's how much! UtilMaster allows you to carry out such rudimentary operations such as:

- **Copy Files:** Allows you to copy any file/directories from one disk to another at the click of a mouse button, whether they normally show up as icons on the Workbench or not. That's help you copy your Format cover disk's photos.
- **Display Files:** Works much like the file reader we use for Word 80 files on our power disk. Just select the file to be read and it will be displayed on screen.
- **Delete Files:** Clean up your disk with the kind of ease of use and speed that only UtilMaster can offer.
- **File Locking:** Works by changing the protection bits on a file so that it cannot be accidentally erased. You can also unlock files.

Getting going

You can load UtilMaster in two ways. Firstly, by double clicking on the UtilMaster icon on the Workbench or secondly, by selecting UtilMaster from our cover disk menu program, DiskMe. Some very extensive instructions are available within the UtilMaster screen. These are recommended reading if you wish to get the most from this excellent program.



■ The UtilMaster screen. Using CLI commands has never been so easy!

Hangman is one of those games that have certainly been around for a long time, a lot longer than both the ST and Amiga that's for sure! You'll find it being played in both the home and in the classroom as it's a great learning tool and a challenging game.

The thing that most attracted us to the version included on this month's cover disk is that it is both adaptable and, above all, fun to play. Using a standard text editor or word processor, you can build a list of words of your choice on any subject of your choice; from the anatomy of the armadillo to the effect of the Chinese social revolution on



■ The chips are almost up for this game. Unless you get the next letter right, it's history.

ST HANGMAN

PROGRAM
By S. Costard
Available on Am. Rev. 4/94
Only
FILES: HANGMAN.PRG,
HANGMAN.DAT, HANGM.
MAN, DOC

sets of 'stop-off' morph malices. To build your own list of questions, all you have to do is to modify the file 'HANGMAN.DAT' in a standard text editor or word processor.

Getting going

You can load Hangman by clicking on the HANGMAN.PRG icon on the Desktop. The graphics included on the cover disk will be of particular interest to all you movie buffs. Full instructions are available within the Hangman folder.

ST DISKMECH

PROGRAM
Shanevare (See Martin Martel)
Available on STs
FILES: DISKMECH.PRG, DISKMECH.DAT,
DISKMECH.ICO

Does your ST disk drive have a tendency to chew up your valuable disk data? Have you lost hours of hard work saving more your word processor just because the ST disk drive decided that it was going to do something as stupid as corrupt data? If you're a victim of corrupt disks then DiskMech will be of great interest to you.

On a floppy disk, the filenames and location of all files on the disk are held in a fixed directory track. When you save a file to a disk, the filename and the place where the file was written onto the disk is automatically added to this list. When a disk becomes corrupt, the most common cause is very often that this directory track has been corrupted in some way. More often than not, some files can be rescued by merely patching up the corruption.

DiskMech is a powerful disk analyzer/ archiver/retriever that allows you to carry out all sorts of wonderful operations on your disk with relative ease. Features include:

- **Sector Editor:** Edit individual bytes within any sector regardless of the size or track number. The Sector Editor is of particular use when patching up damaged data.
- **Format Editor:** Probably the most powerful facility. With it you can create any type of sector lay-

out, customize ID fields and read in other such technical disk drive jargon.

- **Disk Analyzer:** Gropes into the darker recesses of your data with the analyzer. It allows you to analyse a disk's format, the information on individual tracks and even the data between sectors and ID fields.

Getting going

You can load DiskMech by clicking on the DiskMech.PRG icon on the Desktop. If you have more than one drive on your ST, disks must be in all drives or the program will not run. Further information on DiskMech is available within the DISKMECH folder.

FORMAT WARNING!!

DiskMech is most definitely a program for the techies among you. Directly editing the contents of a disk's sectors can seriously damage the data held on it if you don't take special care. As always, Format cannot be held responsible for any disasters that occur as a result of using DiskMech.



■ The DiskMech sector editor. Here, sector zero on track zero is under scrutiny.



NEWZAP

PROGRAM

Shareware (free margin note)
 Requires: an Amiga
 Files: NewZAP.1#,
 NewZAP.DOC

Have you ever wanted to make a quick change to a program or data file without having to go through the long, tedious process of editing and then recompiling it from scratch? Or maybe it's a commercial program you want to alter and you just don't have the source code to go back to? Well now it was an impossible dream but with NewZAP, that dream becomes a reality.

Any of you who are interested in the Amiga public domain scene will instantly recognize the name NewZAP. Based around the original FixZAP utility, it is a handy utility that allows you to quickly and simply make changes to any file on disk by directly "copying" (in the broken and old sense).

But you wrote a program in C that printed your name on the screen and while writing it, you failed to notice that you had made a typing error in your own name. Once the program is compiled, usually the only thing you can do is edit the source code and then recompile, a time consuming task indeed. With NewZAP, all you have to do is load your program, locate the text in question, correct the mistake and then save your update. Simple.

Getting going
 You can load NewZAP by starting from our cover disk menu program, Click.Me, or alternatively, for the adventures among you, you can click directly on the NewZAP.1# icon on the Workbench. Full instructions are available within the NewZAP drawer.

FORMAT WARNING!
 Use NewZAP with care. It is not advisable to change bytes within a program unless you really know what you're doing. Any bytes incorrectly changed could cause the program to fail to work and your machine to crash.



Just search for the appropriate text, click on it and then enter the new text. Also save the changes and that's it!

Our Cover disk menu program NewZAP.1#



After being NewZAP'ed... and the credits can be off your face. Carry on like this and you'll leave people thinking you wrote it.



WBKALEID

PROGRAM

Public Domain
 Requires:
 An Amiga
 Files: WBKALEID.1#,
 WBKALEID.DOC

If it's fun time again on the cover disk. This month we present a rather strange program that produces and integrates kaleidoscope effect on the Workbench while you carry on working.

Are we going to tell you anything else about this program that would ruin the surprise. So just load it up and sit back and enjoy. We think you'll be amused and above all, intrigued.

Getting Going
 You can load WBKALEID by double clicking on the WBKALEID icon on the Workbench. To turn off the Kaleidoscope effect, locate somewhere within the Workbench screen a small window title bar called "WB Kaleidoscope" and click on its close gadget (the box at its top left). Full instructions are available as always within the same drawer as the program itself.



CPANEL

PROGRAM

Public Domain
 Requires: an ST
 Files: CPANEL.1#,
 CPANEL.DOC

Do you often wish you had more control over your ST? While the Control Panel accessory included on the UK Language disk bundled with your ST is fine for changing screen colours and other simple tasks, that program falls short of giving you complete control. Enter CPANEL, the utility that all you Desktop users have been crying out for.

CPANEL gives you all the features found in the Atari Control Panel plus a whole range of others. Features include:

- **CLOCK:** Allows you to set the system time and date for your ST. You can also adjust the way the date and time are displayed.
- **COMMS:** This menu includes a powerful terminal emulator and facilities for setting up both the RS232 and MIDI settings. A real must for all you comms enthusiasts.

- **PRINTER:** Sorry, nothing has changed here. CPANEL uses exactly the same printer menu as the Atari offering.
- **FLOPPY:** Allows you to format floppy disks.
- **SCREEN:** While this menu looks suspiciously like the Atari control panel, hidden away you'll find facilities to change the scan rate between 60 and 60Hz - could be handy if



CPANEL proudly displaying its multitude of window features.

- **KEYBOARD/MOUSE:** Does the ST keypad annoy you? Turn it on or off and change the key repeat speed easily.

Getting going
 CPANEL is a desktop accessory and cannot therefore be put in the normal post-double click manner. To use CPANEL you must first copy the file CPANEL.1# to the root directory of your test disk by dragging it icon from its folder onto the top of the icon for its disk. (There may not be room to copy the file as the master cover disk - use a copy with some of the files removed.) Once the file is copied, insert your ST with the disk that now has CPANEL on it in the drive and the program will load. Once the Desktop appears, move the mouse pointer to the DESK menu and select the CPANEL menu item. Full instructions are within the CPANEL folder.



The Comm's set up page: From here you can configure both the RS232 and the MIDI ports.

you wish to use your ST in America. You can also change the Desktop colours to your heart's delight.

- **MEMORY:** Shows you the memory configuration of your machine.
- **SETTINGS:** Just one function is hidden within this menu. Box Type. Select On or Off to stop the desktop windows from expanding/collapsing as they are opened or closed.
- **RAM DISK:** Install or remove a RAM disk with ease.



EXPLODING WINDOW

PROGRAM: Public Domain
MACHINE: All Amigas
FILES: 016, 016000

Do you ever get jealous of that nice window collapse/expand effect that ST users have on their desktop screen? If so, then you can stop looking on in wonder and add a similar effect to all your Workbench windows.

You can unleash exploding windows onto your Workbench screen by double clicking on the EM icon on the Workbench. Full instructions are available within the Exploding Windows drawer.

ST LINEUP 4

PROGRAM: By C. Conway
MACHINE: All STs
FILES: LINEUP4.LOC, LINEUP4.LIB

Lineup4 is a version of the classic board game Connect 4 that was so popular when forms up and down the country a couple of years back.

The idea of the game is that you opposed the computer in this case and you take it in turns to drop counters into seven columns. The aim is to try and get four counters in a row, horizontally, vertically or diagonally while stopping your opponent from doing likewise.

Getting going

Lineup4 is a desktop accessory and therefore cannot be run in the normal point-and-click fashion. To load it you need to drag the LINEUP4.LOC icon into the root directory of your test disk. Once copied you'll need to mount your ST with the boot disk in the internal drive and Lineup4 will be installed. Once the Desktop appears, move the mouse pointer over the EM icon and select the Lineup4 menu item. Further instructions are available inside the LINEUP4 folder.

Those of you who weren't brave enough to attempt our ST speech synthesizer in last month's issue of Format will be pleased to know that you can still have meaningful conversations with your ST with this great software-based speech synthesizer. And that, no kidding, no plugging in, just load SpeakTex and that's it!

SpeakTex is a simple but powerful speech synthesizer that will allow your ST to speak to you in plain English, in fact any language you choose! Just type in what you want the ST to say, press Return and as if by magic (or clever programming actually), your ST will talk to you. It's not quite up to the super standard as our hardware offering but we think you'll agree, it's not bad.

ST SPEAKTEX

PROGRAM: Public Domain
MACHINE: All STs
FILES: SPEAKTEX.PRG, SPEAKTEX.DOC

Getting going

You can load SpeakTex by clicking on the SPEAKTEX.PRG icon found on the Desktop. Full instructions can be located inside the SPEAKTEX folder.

AMIGA DMOUSE

PROGRAM: Public Domain
MACHINE: All Amigas
FILES: DMOUSE, DMOUSE.Handler, DMOUSE.DOC

Do you ever feel slowed down by the relatively lousy speed of the Amiga mouse pointer? While your hand flicks the mouse around at breakneck speeds on your tabletop, the poor old on-screen mouse pointer often seems to get left behind. Enter DMouse, a program that turbocharges your mouse pointer into one mean wheel.

In short, it's another one of those 'mouse accelerators' that are in such abundance within the Public Domain libraries. This one, however, caught our eye for two reasons. Firstly, its simple to get running. No complicated copying files from here to there, just double-click and that's it. Secondly, it offers some nice extra features such as:

■ **Automatic Activation of Windows:** Just move the mouse pointer over a window and it automatically becomes activated. No need to click on the

window. DMouse does it all for you.

■ **Click to Front:** If a window has more windows on top of it, just click anywhere within that window to bring it to the front - you don't need to find the (Bring-to-Front) gadget, which may be hidden anyway. Click on it again to send it back.

Getting going

You can load DMouse by clicking on the DMOUSE icon on the Workbench. If you wish to copy DMouse to a disk other than the master copy disk, you must also use the CLI to copy the file DMouse.Handler into the target destination directory as the DMouse program itself. Further instructions are available within the DMouse drawer.



You want the window at the very back but don't want the window 'dragged' behind? What do you do?

► Just click once in the window and it jumps to the front.



HAVING TROUBLE WITH THE DISK?

We have done our best to check that the programs supplied on this month's disk are simple to use, error free and have no known viruses. However, we cannot answer thousands of queries or usage problems, and we do not accept liability for any consequences of using the programs.

If your ST Amiga Format disk is faulty - and out of over 50,000 duplicated tapes are unfortunately bound to be - you should send it back for a free replacement to:

ST AMIGA, PO BOX 1000, WORTH, OXF.

DISCOPY LABEL, 20 DRYTH CLOSE, BRACKMILL, NORTHAMPTON NN4 0DY.

AMIGA WARNING: If your Amiga refuses to accept the disk, try using the DISKDOCTOR utility on your Commodore Workbench disk to remove a better working disk for a replacement. We present DISKDOCTOR info on page 93 of Issue 1. Don't worry if every third pass you a 'hard error', this is the disk being unable to read the ST software on the disk.

This replacement offer is open until the end of March 1995.



HOW TO USE THIS DISK

The ST Amiga Format cover disk is a special format disk which both the ST and the Amiga can read. Even if you are a seasoned computer user, please read these instructions carefully or you could permanently damage your copy of it.

The first thing you must do is make a backup copy of the disk. Because of the special format, the normal disk-to-disk copying methods, as recommended in the Amiga and ST manuals, won't work. Instead you will need to format a blank disk and copy the files individually. Don't panic, this isn't at all difficult.

ON THE ST (assuming a single drive machine)

1. Take a blank disk and format it in the usual way.
2. With the blank disk still in the drive, double click on the **A:** drive icon to open up the (blank) contents window.
3. Now drag the icon for drive **B:** into the open window of drive **A**. This will copy all the files and by now off the master disk to your new disk. Make sure that the master ST Amiga Format disk is write protected (the sliding tab should be back so the hole is open) and put it in the drive when asked to take it.
4. You will now be prompted at various times by mount disk **A** and disk **B** while copying takes place. There will be a lot of copying, it is on a single drive ST disk **B** should be the master disk, disk **A** your newly formatted copy.

If you want to cut down on disk usage, you can use the 5.25 format disk program provided on your ST disk as an intermediate step.

Note that our special cover disk contains about 300 more files than will fit on a standard single-sided ST disk. If you own an old 525, you'll have to be selective and copy only the files you want.

ON THE AMIGA (assuming a single drive Am500)

1. Start your Amiga up with your normal Workbench boot disk.
2. Take a blank disk and initialize it in the usual way.
3. Make sure that the master ST Amiga Format disk is write protected and put it in the disk drive. Double-click on the disk icon that appears. Drag any icons you see in the contents window into the "BAM disk" icon.
4. When the disk activity light has gone out, put your newly formatted copy disk in the drive instead. Double-click on the BAM drive icon to open its window, and drag program icons from that onto the new disk icon. This copies the files one by one.

The programs may not all fit in the BAM drive at once on an Am500 - do whatever will fit, then after step 3 delete them from the BAM disk by clicking once on each and, holding the right mouse button down, selecting discard from the Workbench menu. Repeat steps 2 and 3 for the rest of the icons.

USING THE PROGRAMS

ON THE ST

When you turn the ST on and put your disk in the drive, you will see a window opened with the contents of the disk displayed.

Each program will have a number of files on the disk. A program called **DOUGAL**, for instance, will offer files an icon named **DOUGAL.PRG** or there will for a folder called **DOUGAL**. If there is a folder, double-click the left mouse button on it to open it up, and you should see **DOUGAL.PRG** inside it. Just double-click on a program's PRG file to run it.

Each program should have a corresponding **DOC** file - double-click on this and then choose

"Show" from the box that appears to read the detailed info from the author. Always read the documentation before running the program.

Programs described as "disk accessories" don't have PRG icons to be clicked on - in this case special running instructions are given with the program descriptions.

ON THE AMIGA

The main program will automatically run when you turn on your Amiga and insert the cover disk. To get at the rest of the items, you will need to run up Workbench first of all from your normal startup disk. Once at the Workbench, put the ST Amiga Format disk in the drive and double-click on its icon to open it.

You should find on the disk an icon for a program called **CLICK.ME**; do just this, and after a few seconds the cover disk menu program will have loaded. While loading, the program may ask for the Workbench disk to be inserted just follow the on-screen requests.

Most of the programs on the disk can be executed from **CLICK.ME** by selecting them from the menu and choosing either to view the program's documentation or load the program. If a program fails to load from this menu (this sometimes happens through shortage of memory), you can load it from the Workbench instead, by first clicking open the drawer which contains it then clicking on its icon. For detailed comments from the program's author click on the **DOC** file icon in the same folder; to run the program click on the main icon.

When you click on a documentation file, a new window is opened and the text is displayed as a scrollfield at a time. Press any key to move from one scrollfield to the next, or click on the close gadget in the top left-hand corner of the window to cancel the display.

WE WANT TO GIVE YOU MONEY!

Name

Address

Phone
(Daytime)
(Evening)

My program name is

For ☐ ST ☐ Amiga

Approximate total size of files in kilobytes K
(we cannot see programs longer than 300K, shorter submissions, under 300K, stand the best chance of publication)

It is a:

☐ Game ☐ Technical tool

☐ Business utility ☐ Art program

☐ Music program ☐ Educational

☐ Novelty ☐ Other

BRIEF DESCRIPTION

(Checklist please X/OK)

☐ Stamped addressed envelope for return

☐ README.DOC explanation file on disk

☐ Printout of README.DOC file (if possible)

☐ Name, address, machine type written on label

☐ Disk certified virus-free

IMPORTANT - Please sign this declaration

This program is submitted for publication by ST Amiga Format magazine. It is my own work and has not been submitted for publication elsewhere. I claim my national name and glory.

Signed

Date

I declare that my program is either ST or Amiga which you may either execute under the usual operating system, or which is a ROM.

I declare that my program is designed to run:

☐ On a 5.25 or 3.5-inch floppy disk

☐ As a ROM in the custom ROM slot in the Amiga which requires exactly how to use your program.

I did not harm, injure or offend anyone in writing this program.

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4000 copies of this program are being printed.

Two copies will be made of 4000 copies of this program for each month.

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STANDARD 89 *

Machine Type: _____

Ruby-Comm Communications Software for your AMIGA

Y2

The Ruby-Comm package gives you the ultimate in easy to use communications software for your Amiga. The package includes RubyView and RubyTerm. RubyView is an advanced multi-window Viewdata Terminal ideal for accessing Proxel and Micronet. RubyTerm provides an extensive VT52/100 emulation and also includes XModem, XModem-CRC and Advanced Kermit Protocols. A large number of modems are supported including operation at 1200/75. All for \$99.00 inc VAT and P&P.

Ruby-Net The Complete Viewdata Host & BB. This package enables you to set up your own Viewdata BB for only \$199.00 inc VAT.

For further information on Ruby packages or other Amiga products, please phone us or call in at our showroom.

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Moderns are much maligned creatures. So what if they've been responsible for lapping into Prince Philip's Pinedale machine? He never used it anyway. They had the starring role in *Filetuxes* which didn't help their image much, but it's not every bored Moon-year-old who picks up a modern and starts *Planet* like B. Most potential hackers would be lucky to find a way into the Open University computer which only offerings to the computer science are a shopping list of grossly expensive hardware and brief information on the magic of particle physics - great fun.

Supply and demand
Buy back in issue 5, we had a good long look at the plethora of online services you can choose yourself with. But to get yourself set up for comms, you need four things: a telephone line, an ST or Amiga, a modem, and some software. Let's assume you've got the first two - it's the modem, and software that cause problems.

There are a thousand and one types of modem on the market, all offering subtly different features. What you've got to do is work out which-date services you want to use, find out the features they need, and match your modem to that - while leaving room for expansion, of course.

What can you do?

As time has progressed the world of comms has grown from an elitist band of boring bulletin boards (BBS) and the now infamous Pinedale to encompass a wide-ranging universe of intriguing features.

The commercial systems are the easiest to use since most offer pre-packaged deals which include a modem and usually some kind of reduced subscription. Microsoft is the most popular commercial system. *Revlon* Shakes, its on-line game, it offers hugely popular chatlines which allow users to telephone into the network and scatter messages from one end of the system to the other.

CompuNet offers basically the same kind of system as Microsoft with its own multipage game, *Redaction*. It's all very Commodore-based but with popular Party lines, a range of free programs and the specialised software now available for ST and Amiga machines, it's becoming one of the most popular commercial systems.

Need to know

The standard communications software offering 1200/75 baud, will be supported on the ST. Aten's popular *Linkline* is good value at £49.95 but it's modem capabilities are sluggish. On the Amiga side there's a problem handling split baud rates: making connection to commercial



■ The Pinedale is a popular choice largely because of the good deals available from commercial systems - Microsoft have redesigned it and offer good pre-organising deals. For the advanced user there's the Series 4 range which hardly look like moderns at all.

BAUDING SCHOOL

When the flashy graphics of your favourite game get too much for you, then what do you need? Pick up a modem and sample the magic of comms. **MARK HIGHAM** gives you the low down on exactly what you need to go shopping, explore your bank balance and meet members of the opposite sex... all from the comfort of your keyboard.

systems at 1200/75 extremely difficult. *Revlon* wanted the dilemma with their *4-Connect* by logging about split baud rates altogether. You just can't connect to Microsoft with *4-Connect*. However, other packages have looked and looked the difficulty. Products including *V2 Computing's* *Many Lines* provide the Amiga with 1200/75 baud and four channels.

To use CompuNet, you have no choice but to use their own software, although a good modem will ease matters.

Under the hood walk

For the four comms algorithms, bulletin boards are the great in the world of communications. There aren't enough systems run by

megacorporations so they offer a more extensive chat hours for computer users to exchange ideas. There



CORRUPTION IN HIGH PLACES

Increasingly virus-shedding devices are being introduced into modems to overcome the problems of line noise. MNP error detection provides a check on data before it is sent and then compresses receiving and transmitting data. If they are not the same then an announcement of data is requested. Nine levels of MNP detection exist offering varying methods of data compression. When two MNP modems get in touch with each other they transmit a signal requesting MNP detection and the required level. All of this takes place unknown to the user.

HOW IT ALL BEGAN

In the old days of comms, before BT discovered what cables, you connected computers to the phone line via an 'acoustic coupler'. This converted your data into audible whistles (the kind you hear if you dial up someone's fax number by mistake), and when put through a teletypewriter the ordinary teletype would then give the signals out. What surprisingly with the World's Modems system, it was proven to be a slighter noise and so only slower speeds could be used. With the advent of the direct-coupled modem plugging into the wall socket, external noise was minimised, higher speeds and auto-dialling techniques materialised.

Modems have made a dramatic leap forward in the last few years and with System 8 now being installed across the country, the infamous BT promises may well be laid to rest and really high-speed systems could become a reality.



BELLS AND WHISTLES

Wow, so what does all the jargon do for you? Here's all the main features which you're likely to find in a modem:

BAUD RATE(S) - 200 is largely outmoded now and the higher speeds are the way forward. 2400bps is rapidly becoming a major contender, although most modems need to be able to work at 1200 baud.

RTS/CTS - automatically answers the telephone, opens your phone, but most use control you intend setting up a full protocol.

ATDT Data - normally used. Faster-calling devices, it will automatically dial the telephone number as stored in your memory buffers, won't start until you hit the line you've dialed is working at, and configure that accordingly.

DATA/RTS - only available on the higher-priced modems. When connected to a similar modem, invisible checks are inserted in the data so mistakes can be detected and rectified.

BAUD/RTS - allows you to customise your modem to make a note of the settings and return to them next time you turn on.

RTS/CTS COMMANDS - the industry standard used to tell the modem what it ought to be doing. Unless a modem incorporates this then forget it.

SPEED DIALING - allows the modem to detect the incoming speed and then transmit data back to your computer at the best rate for which your software is configured. Small if your software's pretty useless.



■ Manual-dial modems, such as the Amiga's 9600S, come reasonably cheap. Being manual-dial you'll need to put on your trusty index finger to dial the number.

are in excess of 200 boards listed around the country, and even more which go unsold/unused largely because they serve an audience which wouldn't benefit from data at 9600bps. Still, such as The Lighthouse provide instant material for all range of interests. Once asked by the police after it was disclosed that it gave out confidential information, an investigation of the board followed. It was eventually associated for its useful news features.

Emerging amidst the usual range of BBS's is a new breed of specialised boards catering for minority interests. The CDSB board provides a free on-line game for users at will in giving info about all other online multi-user games, world telephone numbers of gaming systems and passwords providing access.

If you prefer more explicit subjects then there's a range of boards catering for most sexual demands.

WHAT WAS THAT AGAIN?

If you missed the mind-blowing aspects of the world of comms in issue 4, here's a brief recap of what goes on...

When you dial an on-line service up with your modem, the speed at which you can send and receive data is called the baud rate. The higher the baud rate the cheaper your phone bill will be, but the more expensive the link. The current 'fast rates' in operation are 200, 1200/75, 1200 and 2400. 2400 baud would be 300 bits per second (bps) or 30 characters per second. Many of the commercial systems are running on the split baud rate of 1200/75. The receive data is at 1200bps and send it at 75bps.

Commercial systems offer more than just scrolling pages of text - thanks to the variety for systems that offer limited-style block graphics. Block buffers arranged you will probably remember mode P graphics. Any competent terminal software should be able to emulate these codes, providing flashing, coloured screens.

With the use of a telephone call being one of the major responses in comms, commercial systems usually have a local area packet connection point (node) in every city. Telecoms PMS networks is the alternative offering inexpensive calls around the world. A single telephone call will take you into the network and two parameters will then get you through to the system you want.

THE SYSTEMS

Microsoft	Reg. - £22.99 per quarter (Min. 12 months)	01-887 7812
CompuLink	Reg. - £22.99 per quarter (Min. 12 months)	01-887 7811
Modem	Reg. - £5.00 per quarter (Min. 3 months)	0425 978888
Amiga	200, 1200, 2400	015-444 8812
Amiga's Amiga	1200/75 standard	0707 70400
9600S	200, 1200, 1200/75	0700 886078
CDSB	200, 1200, 2400	01-773 5454
Phonix	200, 1200, 1200/75	0425 97 7704
Source of Home	1200/75 standard	01-888 8894

These are a little more tricky to locate but once you've logged onto one you can often get hold of the telephone numbers to other such systems. MMSB provides downloadable text files exploring a range of dubious sexual interests as well as offering picture files in Mac format. These can be viewed using the Picwatch program on issue 1's cover disk - but be prepared for (bushed) 5700S offers for ST and Amiga owners offering further exploration into this field since you've registered.

Making contact

Accessing bulletin boards isn't generally very difficult. Most modern editions of modems will automatically remove the speed of the line and configure themselves to suit, so saving you anything about baud rates. Just make sure your modem is capable of 200, 1200bps and 1200/75 operation. Increasingly boards are supporting the higher speeds of 2400bps which are more susceptible to line-noise but make downloading at speeding file much faster.



■ A typical standard screen from Microsoft

Most available software is late quads (except Amiga's Amiga version X-Com) although the addition of features of XMODEM transfer protocols are essential if you intend to download files. Packagers should support this as well as some method of speeding incoming data in a file so that it can be viewed later. Again, Amiga's Fastwin seems to be the best for handling spooled data because not only does information go off to a disk but a large window provides you with access to view at pages of data.

Continued on page 48



■ There are many modems cranking onto the market armed with a red triangle warning against connection to BT phone lines. These modems offer the same features as the approved ones but at a reduced price. But Amiga's Amiga 9600S and Amiga's Amiga 2400 both offer 2400 baud rate, auto-dialing and auto-answer at fairly cheap costs. Be warned that, in theory, if BT discover you're using unapproved equipment they could disconnect your phone line.

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It is believed a new approach to the problem of the "missing" 100,000 is to "retrain" the job seekers. The idea is to help them find ways to fit into the labor market. The program is called the "National Training Initiative for the 21st Century." It is a joint effort of the Department of Labor and the Department of Education. The program is designed to help people who are unemployed or underemployed to gain the skills and knowledge they need to succeed in the 21st-century workforce. The program is being implemented in a number of ways, including: providing training and education opportunities; providing job training and apprenticeship opportunities; and providing support services such as counseling and job placement assistance. The program is expected to help a significant number of people find employment and improve their economic situation.



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James Thompson (1910-1970) is the author of *Practical Applications of the Principles of the Law of Attraction*, a book that has been translated into 12 languages and is now being translated into Chinese. He is also the author of *The Law of Attraction*, a book that has been translated into 12 languages and is now being translated into Chinese. He is also the author of *The Law of Attraction*, a book that has been translated into 12 languages and is now being translated into Chinese.

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The degree of time for the *in vitro* polymerization to complete and the pattern obtained with the polymerization were also studied in order to obtain a better understanding of the mechanism involved in the polymerization of the monomer. The results showed that the polymerization of the monomer was more rapid in the presence of the polymerization catalyst than in the absence of the catalyst. The results also showed that the polymerization of the monomer was more rapid in the presence of the polymerization catalyst than in the absence of the catalyst. The results also showed that the polymerization of the monomer was more rapid in the presence of the polymerization catalyst than in the absence of the catalyst.

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Plus Series 1200 (good deals offered from commercial systems)

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Many Shop's OnLine for the Amiga handles high-speed baud rates as well as excellent spooling facilities, but it's the RubyView and RubyTerm communications packages which remain the leaders in this field because of the extensive baud rates supported and their brilliant data handling routines.

Setting up a BB

The first step in setting up your Oct bulletin board is to get left to give you a telephone line. This usually requires you to grovel and then hand over a fee of around £115. Most school moderns come with an auto-answer board as well as connecting them to set up your own system is unlikely to be too much of a problem. With up to a 10% reduction for Sygnix, the W53000 is largely regarded as the leader in this field although the Dowsy Quarter modem is another popular contender. Some Sygnix have suggested that the Dowsy modem has a tendency to log users off of a system when it detects they don't sound friendly, so a lot of systems are clearing clear of it.

Factor's answer to setting up your own system is the Series 4 range of modems. These have changed the



■ The Minimax W53000, Plus Series 4 12000 and Dowsy Minimax Plus 3 - the ultimate choices for would-be Sygnix setting up their own dial in bulletin board systems.

design so that instead of being a little black box with flashing lights it provides an LCD display of the various settings most into a cream case. It provides an invaluable indication of the strength of the carrier signal and ultimately the reliability of the telephone line.

There's only a limited amount of software available for setting up your own BB so many Sygnix have resorted to writing their own. However, Microdot are coming to their aid by releasing BB3 BT v1 for ST users. It can run on an ordinary 512 but 1 MB

of memory and a hard disk are recommended.

Amiga Centre Scotland's Amiga package gives a comprehensive system for Amiga users intending to create their own BB. Both of these packages give you the opportunity to create the system that you want by allowing you to customise areas of the board so that you can control different levels of access to everything from your Amiga Minidisk's recipe for jugged hen to the address of President Reagan's retirement home. ■

MARY'S ANGELS

The law on transmission of sexually orientated text and picture files is strictly laid but it seems that as long as you are informed about the nature of the files and content, therefore, take offence, then the Sygnix has done its job. The bulletin board is the only area where you would find this type of material since commercial systems are largely reluctant to cater for such controversial subjects. However, that said, one of Microdot's most popular areas is the unmoderated gay section - a closed user group for gay users to exchange photographs. Many Minidiskettes would not be around.

MICROLINK

Microlink is a text-based system aimed primarily at business users. It doesn't have the colourful rendered graphics but with the opportunity to send the messages and letters all around the world it's used by many businesses. It has the advantage of being part of the PPS network which has local telephone numbers all over the country and allows users to contact it at baud rates of 300/600, 1200/24 and 1200/1200.

THE MODEMS

MODEM	300	1200	11/25	2400	Hayes	BT	BB	Ext. Dev.	Price
Factor Sygnix Plus	✓	✓	-	✓	✓	-	✓	-	£195.00
Minimax W53000	✓	✓	-	✓	✓	✓	✓	-	£175.00
Minimax W54000	✓	-	✓	-	✓	✓	-	-	£175.00
Minimax W53000-232bit	✓	✓	✓	✓	✓	✓	✓	-	£295.00
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Plus Series 1200	✓	✓	✓	-	✓	✓	-	-	£175.00
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Dowsy Quarter	✓	✓	✓	✓	✓	✓	✓	✓	£180.00
Factor's Discovery 1200 CX	✓	✓	-	✓	✓	-	-	-	£155.00

BB Hayes-compatible modems (included external and auto answer boards).

BT indicates battery backup features which will maintain the settings during power off.

BT approved modems are indicated by a y in the BB column.

Add on units refer to a plug in board which can fit into the Plus 96 232 port, providing error detection up to 9999 & 8 comes at a cost of £145.00.

CONTACTS

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MINICOM, Highgate Road Industrial Estate, Ipswich, IP4 6PH, (0473) 215566.

PSOL, Astoria Road, Stratford, Essex, S15 2PL, (0274) 486111.

DOITY, Market House, Rensbury Business Park, London Road, Newbury, Berkshire, RG13 2PL, (0493) 13000.

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PD UPDATE

Have you grown bored of all those games Granny Gertie bought you as a Christmas present? Where can you get quality software for now? It's tough keeping your computer happy these days so there's only one thing to do - saunter down the PD libraries of course!

The programs listed in this month's *Amiga PC Update* were taken from the TRMG collection of public domain software. Most can also be found in other Browsers but the numbers quoted refer only to the TRMG collection. As far as we are aware, George Thompson Associates are the only PC supplier to support the TRMG range of disks, but check the advertisements within *Format* for others.

CHET
SOLACE
SHAREWARE
EXTRAVAGANZA

As a result from last year, the Chertco Sales Storage Exchange is not a single program but an entire disk packed with the very best of Fido's domain programs. The program is currently only available from George Thompson Associates at the reasonable price of \$4.95.

As the name suggests, all the programs on the Great Solutions disk are free.

Many of the Great Saline programs are completely new to the PC crowd and have therefore never been seen in this country before. Even the popular Red Fish – for of Fish, also late – has't been there!

One particularly good thing about the Chief Justice's collection is the way each program is presented. As well as the film being completely self-booting (which is a useful feature), the programs are crafted to allow as much material to be examined online as is possible. In addition, all the program documentation files are presented all with up to eight colours being manipulated on the standard Windows screen. Eight colours! I hear you ask, "Yes, the Chief Justice did not initiate a program to increase the number of colours available under Windows 95."

Programs on the disk include the new famous Pointer Animator which, as the name suggests, allows you to animate your mouse pointer. Another program is a rather obscure reference for desktop users called Morobias. It might appeal to the physics buff, but there isn't your average grandma wouldn't there, too much of it. The Chat Colours collection is certainly an offer not to be missed.

TUES

These disks are

On a not so serious note, the new offering is an excellent game which has kept most of the Forum team going during these cold February nights. Here is a version of the classic Chinese game of Mah-Jong, made famous by Activision's *Shanghai*.

If you've never played Mahjong, then you just don't know what you've been missing. Mahjong is a lot like playing a photograph of *Iduna*. Come - one place and you'll feel like you're back in love.

The algorithm is to remove tiles which have been stacked in the shape of a pyramid. This can be achieved by locating matching tiles which can be freely moved either to the left or right. In the event that both sides have been blocked then the tile cannot be removed. Once all tiles have been successfully taken out then the

game's over and you've won yourself a life. Sounds good, doesn't it?

ICANN.ORG

Thank you! 22

Do Angus agree with you?
If so, lookLab might be just
what you've been looking for. It allows
you to create and modify WordPerfect
6.03a, 6.03b, 6.03c files.

We've already featured some excellent user abilities on the *Format* cover disk but *TrueType* includes several powerful features which might stand out from the rest. For example, any font can be loaded up and with a mere click of the mouse button the font attributes may be changed quicker than Joan Collins can have a new face on.

It doesn't include any facilities for
cultural, dining, fitness, or social



■ **Henry is going to file!** If you do have reserves of least a couple of days and are returned with piles of nice... you'll need it to get through the winter!





THE SUPPLIERS

In the UK, the following companies are responsible for the distribution of ST and Amiga PD software. To find their full addresses, give them a ring or visit our advertisers index.

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George Thomson Associates -
0277 882 234
Amiga PD (United Kingdom)
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ST

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probably better off using IconLab only in conjunction with an icon designer such as IconBuilder which appeared on cover disk five.

SettKey

TBAG - Disk 22

This is definitely a program for the techies amongst you. SettKey is designed to allow you to create cus-

tomised keymap files. Using the SettMap command on your Workbench, you can have the keyboard configured precisely to your liking. Just think, you could have every key displaying the letter 'W' - and that's got to be useful!

This was actually once a commercial product but due to lack of sales it was decided to release it into the public domain network. It's a very useful

program which is probably the reason Commodore didn't put a similar one into the new Workbench release, 1.1.

Using SettKey is simplicity itself. The customised keymap can be created by loading the program at which point you're presented with a picture of an Amiga keyboard. Alterations are made by clicking on the key you want to change and entering a new value.

Jason Mallen.

ST

Christmas is the season to be jolly and February is the month to stir off those Christmas debts. So, especially for those of you who found a computer in your Xmas stocking but not much money to buy all those exciting games with, this month's PD article is a round up of the very best in PD games.



JUMPSHIP

First up is Jumpsip, a respectable conversion of the great arcade favourite Qbert. You control an odd creature who looks like a cross between a human being and a spring. This creature is placed on assorted game surfaces made up of different coloured squares on varying levels. The object is to jump from cube to cube and change the colours while avoiding an assortment of different snakes and traps that are out to stop you in your tracks.

The colourful graphics are equal to the arcade version of QBERT itself and the game play remains just as challenging because as you complete one screen you progress into another, more difficult level.



■ The colourful graphics of Jumpsip are just trying to keep them out of cube, acting maddie and avoiding all the bad guys.

BEST OF THE REST

Here's a list of the titles worth looking out for next time you take a stroll into the Public Domain Market.

PD WORKSHOP LIBRARY TRACK - Another disk full of programs. This is only available from George Thomson Associates. For £4.99 you get the data contained with the very recent and greatest in PD software. One particularly good program is 'Colorize', a three-dimensional game which comes with a pair of red/blue glasses, essential to appreciate the startling 3D effects.

The only criticism is one which many multi-level games share: the inability to begin playing on another level other than the first. Every time a game ends you must begin again at the first level and this level begins to be overly tedious and mind-numbing.

BLITZ

The next game is Blitz, written by the respected UK PD software house, Budge UK. Budge are responsible for a large number of quality PD games which can be found scattered throughout the PD libraries.

The object of Blitz is to attempt to land three airplanes. Unfortunately, the ground below is not ideally suited to smooth landings and even a losing T10 pilot would be fond enough to find a safe place to crash, not to put too fine a point on it, your intended landing strip has a city built on it. The only sensible way of landing is to first flatten the buildings by dropping bombs on them.

■ For another breakout clone here it's best to see the PD game, Orbit is undoubtedly more challenging with pin-point accuracy an essential requirement. With a special construction set you can even design your own scenarios.



This isn't as simple as it sounds since correctly using the controls takes skill and concentration. It also becomes increasingly dangerous since your three airplanes travel increasingly lower and faster until you're in danger of crashing and burning.

This is a challenging game which might not win any Tarnet Good medals but it's certainly similar to playing one of the fine quality Blitz games on the ST. The levels of difficulty become harder and harder and there's a skill to be developed in precisely placing as many bombs as possible.

BOUNCE

Owners of a monomonitor (or a colour screen if you have the PD mono emulator) will be able to benefit from Bounce which is one of the best

bullet hit type games seen on the ST either commercially or in the PD libraries.

You control a cannon which can be moved across the bottom of the screen. You must aim it to clear bouncing balls and eliminate them before they smash into you. Should they stop bouncing, they'll begin to roll and steamroller your cannon into oblivion.

After different screens featuring more and more frantically bouncing balls, these bouncing balls start to give you a taste of your own medicine by among themselves with high-powered laser cannons. The action continues with screen after screen of vicious plans laid out on your destruction.



ORBIT

The original BreakOut has probably earned the title of most imitated game with Arkanoed being one of the finest of them all. Amongst the many

Arkanoed clones in the PD is Orbit, a game which is also going away with the new T1035 games language as an example of its capabilities.

Orbit is played in a similar to its forerunner with one major difference - it's infinitely more challenging. It takes pin point accuracy and strategic planning to succeed in this game.

For those who can get on it the many different screens in the game, there's a construction set built in which allows you to design your own playing areas.

As it is, Orbit is an excellent game in the customarily popular breakout vein. If it had been created before Arkanoed it's possible that it might have received similar commercial success. But it wasn't which is why you can get your hands on it at the minimal price of a PD disk.

Elliot Stein.



SCREEN PLAY

It's been a good month for the Amiga, gaining both Format Golds – well, last month the ST swept the board. Dragon's Lair lives up to and exceeds expectations and War in Middle Earth provides great cerebral entertainment. MARK HIGHAM and GARY BARRETT delve into jiffy bags and come up with the best games of the month and the shape of things to come.

PREVIEWS

BATTLEHAWKS

1942

LUCASFILM ■ ST & Amiga
£24.95 ■ End of March

Lucasfilm have always had a reputation for bringing out very good games and that looks set to improve with their next release, *Battlehawks* (1942). A light simulation with dog-fights galore, three different types of Japanese aircraft and three American planes do battle over the Coral Sea, Midway Island, the Eastern Solomons and Santa Cruz. There are thousands of flying hours to log and you can even see an action replay of your success or failure.

CYBERNOID II

HARDCORE ■ ST & Amiga
£19.99 ■ Due April

Tony Cosper, author of *Resonant*'s much-loved *Cybernoid*, is currently finishing off a sequel with the mind-bogglingly unique name of *Cybernoid II*. These cuddly games are back, but with a revamped style incorporating loads of extra strategies you should be able to blast through them for more



▲ The early stages of *Cybernoid II* on the Amiga.

easy. There are countless levels to complete and still plenty of tricky hazards to avoid.

TIMESCANNER

ELECTRIC DREAMS ■ ST & Amiga
£19.99 / £29.99 ■ Due April



▲ A new twist to pinball in *Timescanner*.

Pinball has been in existence since the dawn of time, and computer pinball has been around almost as long as computers. *Timescanner* is a conversion of the Sega arcade game, with four levels divided into two sections and with smooth-scrolling between the levels. It claims to have a realistic 3D feature – if so, it'll be a first.

DRAGONSCAPE

SOFT. HORIZON ■ ST & Amiga
£19.99 ■ ST February/Amiga March

Dragons get some good publicity in software: Harcourt's new game, well

get ours, do anyway. *Dragon* is the name of the mythical pet and you ride on its back over a multi-directional scrolling landscape of the world of *Isuana*.

The King of *Isuana* has dispatched legions of monsters to destroy your kingdom and you have to deal with them in the usual manner – gratuitous violence. With five levels, each one covering 80 screens, you'll have plenty to do.

THUNDERWING

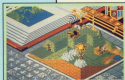
ATRONIC ■ ST & Amiga
£19.95 ■ February

If you have a tendency to destroy everything in sight, including your pet, then, when playing *Thunderwing* (for Atronic's next release may cause you some problems).

In *Thunderwing* you have to fly over a vertically scrolling landscape blasting away at enemy forces, but at the same time doing your utmost to leave the columns in one piece, and preferably not a dead peck. Lots of levels, lots of enemies and lots of innocent bystanders to massacre.



▲ Fly the wings, but don't burn the columns in *Thunderwing*.



▲ From *Battling*, the authors of *Populous*, comes *Populous*, a new game with divine overtones. Two nations are born: one good and the other evil (same old story), each has their own deity, and guess what? Both nations seek to exterminate the other. You can choose to play either *God* or the *Devil*, which mostly involves beating up the other nation. Options cover multi-player games between two STs, two Amigas, an ST and an Amiga, or even for students for the same breaks. We've got the definitive review book up for next month – watch this space.

VINDICATOR

TEMPEL ■ ST & Amiga
\$24.95 ■ Due April

Vindicator is the first ever release under the new Tempel label. It's been converted from the addictive Atari console game of the same name and offers 3D, multi-directional scrolling.



▲ Play attacks in Vindicator.

It's set in the year 2125 outside the galaxy 1915. As team commander of a 2000 strategic battle tank, you take control of your own destiny in the fight to destroy the evil Targant Empire.

Options to customize your tank so that it can support an arsenal of weapons and superpowers look set to make it the typical type of blood-soaked game which always gets you rain-soaked.

GUARDIAN MOONS

MICROCDAL ■ ST
£19.95 ■ February

Mr. Whitehouse, read on... Vindicator is the incomprehensible word recently coined up by Microdeal to describe its multi-layer, multi-directional, paral-



4 This one's releasing tonight! Since the ST and Amiga versions in April. The game sees you playing the role of knight, a warrior, and you have to wander through unlikely landscapes in an attempt to annihilate the different dragons and monsters. Fetcher events, digital sound effects and 3D animation make up the action.



▲ Be Mr. Whitey for a change in Guardian Moons

to scrolling of their new game.

For a change you get to be a nasty piece of work - the most subtle

and psychotic terrorist of them all who can go round causing heavy and destruction everywhere - sounds like a trip to lamondry's. Your objective is to destroy the eight guardian moons that protect the peaceful planet of Kongradus and teach those jerky dog-eaters. Sounds like lots of mindless violence, but isn't that what computer games are all about?

MIXED ASSORTMENT

This month sees the arrival of 18 games for the ST and 26 for the Amiga in the Format offices. After hours, looked away to a darkened room, our ballroom ladies declared War in Middle Earth and Dragon's Lair as the most beautiful games they've ever seen. The superb graphics of Dragon's Lair demonstrate just what an Amiga can do and it's all without the aid of a laser disk - (are you wondering Miss. War in Middle Earth is based on Tolkien's Lord of the Rings (no, the film at Christmas?) and features plenty of strategy and some excellent graphics.



But onto the cutting room floor for 'Infernal' addition for the Amiga, Tempele Games, a strip action game. It comes with loads of pictures and some cute French gig-

gles. Don't expect to get the young lady in question unharmed quickly though - she's a good hard player.

In the update from Amiga versions of Lion and Let Die by Demark and Quinlan's Blucky Mouse appeared this month, both being very similar to their ST counterparts. Also on the Amiga there's Phantom Fighter from Marbach, a shoot 'em up in the Mame era, although neither seem as good. Sprayed from US Gold is nothing more than a cross between Roadblock and Road to a surprising change in the usual type, a US Gold package (who shall remain nameless) to protect the innocent told us, "I can't see why we bothered working on it at all." We could see.

ST games that don't make it this month include Advanced Rugby Simulator (pretty awful, even for Commodore), Highgate (stupid by Amiga (no, there aren't any other names in it), Texas of Love from Microdeal and Superman by Tinseltown (great graphics, shame about the underpants).

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DRAGON'S LAIR

ENTERTAINMENT INTERNATIONAL

Amiga - £44.95, Jayco/UK, £50. ASD/A2000 with 1Mb, A1000 with 512K.

ST - £10 version played

First there was the laser disk game which spawned an arcade revolution; then there was the ST adaptation which created Atari revolution. Now the Amiga version has reared its green, fire-breathing head. Computer animation was never intended to be easy - otherwise everyone would be doing it - and Dragon's Lair offers the Amiga owner a costly but stunning insight into the frenziedly evil world of colourful Dragons and misshapen maidens.



During Dirk's negotiations some way of getting into the castle but whoever built this place has obviously been watching too many BBC TV programmes.



Cling onto the bridge and wave your sword around as if you know what you're doing.



Once you've scared off the party boss you can put yourself up through the tent and dash off to the next scene.

With bottles of poison scattered around, weird take-away food hanging across the road and a whole army of enemy bats, the only sensible way to defeat them is to get out Dirk's trusty sword. This might be easy but it doesn't tend to have too much effect if it's not done at precisely the right moment.

By pressing the fire button you're instructing Dirk to draw the sword, and you must then trust to his own aim. This is the way most of the scenes work. You don't have any command over Dirk until specific points when you're required to perform the right moves with the joystick. For example, when you wander into a room you cannot close Dirk around except along a few prescribed paths, and

STRATEGY

you can't pull out the sword until the Dragon gets close to you.

As you progress through a room, inanimate objects - usually doors - begin to flash. By heading towards them you can beat a path to the next level. However, if you see something flashing on one of the creatures then avoid it like the plague - it's a sign of instant death.

With only three lives you don't get much of a chance to negotiate with the monsters. Despite the fact that each level only requires a few simple movements of the joystick the Lair's title, it's no easy task, demanding what seems to take and what. However, seasoned Lair players should find a welcome similarity to the original arcade game.

LASERS ON THE ST

Although there's no ST version of Dragon's Lair played, the game has already made an appearance on the Atari.

Early last year, Microdeal arranged a scheme whereby owners of a special video disc player could buy the Dragon's Lair disc and receive the game from your ST. The video disc player retained its own TV screen, and the ST connected to the player. It strategic points in the action the motion would stop and your ST's screen would ask you to press a key to go left or right, draw your sword, and so on. Then Dirk would carry on - hardly giving interactive stuff.



Dirk thinks Gopher is a stone here somehow. It might look like a pop-up menu bar but it's one of the hardest obstacles - use mistakes and you're through the floor.

It strange how the place seems like when you put your foot down.



GRAPHICS AND SOUND

The animation is spell-binding. It's the sort of thing that programmers would gaze at in awe and Games Gaze says "I saw this on TV yesterday afternoon." The characters are animated so smoothly and with accurate moving lips that you won't know you're not watching a conventional cartoon.

The game comes on two disks and claims to incorporate, in a compacted form, a massive 1.83 Mb of brilliant action.

Monsters look great. Single isn't exactly the most frightening Dragon you'll ever meet but since

you don't get to see too many of the fellows who you're wandering around the Sandbury's battlefield you'll probably find him an intriguing foe. With an extraordinary resemblance to the original arcade game you'll quickly find that it's a far closer way of looking the desirable Princess Daphne.

Sound is fairly extensive as well. With atmospheric background effects and a range of speech and screams as Gopher meets his end, it's the sort of thing which Mary Whitehouse would spend a lifetime discussing.



3 Always beware of an empty room - Sings and his cohorts have a burning desire to pop up all over the place and cause havoc and mayhem at inopportune moments.

4 Considering he hasn't lost his mounting class of Catherine yet, Dirk is a pretty handy mount but it's still hard dealing with Sings, especially when he has the many doors to and fro and can take your head off almost instantaneously should the two ever find the way to the next level, but can they? Dirk thinks it is time! It's tough being a hero.



5 One drop and it's bye-bye, Dirk.



6 At last your prize, Dirk you lucky dog.

AIM

What if you mean you never played the arcade game? Oh, here's the deal. That outrageous and flamboyant hero, Dirk the Daring, takes to the Dragon's Lair like a duck to the water, slower to rescue the sales Princess Daphne. Given that he's about to confront fire-breathing Dragons and a castle in such an appalling state of repair that it crumbles under every footstep, you can hardly blame him that he looks decidedly unhappy.

The game starts with Dirk venturing off to the castle and marching slowly over a bridge riddled with holes which don't appear until he falls through them. How dastardly Dirk is getting it not doing. He plunges onto the bridge with all his might, kicking at the purple tentacle monster about to wrap its hairy arms around his neck.



4 After a hard day, resting isn't a bad idea. If you're a fan of the game, keep him off the blue button - it might not be a bad idea of a game of Civilization or a game of Chess but it will not be the game.

This is your first obstacle and it's only by pulling out the sword at the right moment and moving up on the joystick that you progress any further. If you haven't played Dragon's Lair before then you're going to spend some time wondering how on earth you get any further but perseverance usually brings rewarded death followed by eventual success - a lot of the time.

After a bout of poisoning, Dirk enters a room populated by some friends of Sings the Dragon, who just happened to pop over to visit in a lot of evening make-up. The three chaps aren't too happy and Dirk will do just as well. Being brought through to death and about turns every blood vessel in his face - not even his tongue and up goes the flaming sword through.

This is where your stamina is tested pretty much to the limit. Other scenes which follow are likely to take hours of play to master, especially the stained which looks damned near impossible, with only a single sheet as a manual you must go back again and again if you're going to master each obstacle. Once you've managed to overcome them all then obviously Dirk is in for a treat from the delicious Daphne.

all graphics	0 1 2 3 4
moving graphics	0 1 2 3 4
sound effects	0 1 2 3 4
looking interest	0 1 2 3 4
overall 92%	

CONCLUSION

The game is not exactly well-documented but that's largely because once you've found how to overcome a problem then it will never be a problem again. For example, in the poison bottle for rooms, all you need to do is hold the joystick to the right as soon as you enter and you'll magically get through to the next room without any hassle at all.

Considering that the game is supplied on six disks, the number of disk swaps is not too bad. The game is arranged with about fifteen seconds of action followed by twenty seconds of disk swarms to load the next level. This can become tedious and certainly tends to reduce the addictive quality, but considering the amazing graphical attention it's hardly surprising.

Dragon's Lair is far ahead of its time and it's definitely the cutting edge you've seen on the Amiga. It's the best argument yet for going out to buy that memory upgrade you need.



Unit 2 Willowdale Farm,
Spout Lane North, Stanwell Moor
Staines, Middlesex TW19 6SW
Telephone: (0783) 643993

[illegible]



Mastertronic's latest incarnation of the classic fantasy novel *Lord of the Rings* is a wargame with a difference. With Frodo and his mates wandering off to destroy the One Ring you just know that if left to his own devices he'd have that ring melted down in no time at all, and still get back home in time for tea and crumpets. Unfortunately you've got to control him and make sure the ring doesn't get to Sauron - an evil guy who's got no right to wear jewellery.



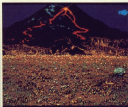
1. On their way to Rivendell, Frodo and Aragorn meet up with a Nazgûl. If the Nazgûl wins the ring will be taken to Sauron and the war will end abruptly.

WAR IN MIDDLE-EARTH

MASTERTRONIC

Amiga • Mac • PC • DOS • £19.99

ST • Due end of February



2. Mount Doom, Frodo's ultimate destination, the only place where the One Ring can be annulled and Sauron's defeat assured.



3. Eorl the Great, once head of the order of the Riders, is now an enemy, his home is the tower of Dol Amroth.



4. Theoden, king of the mark, lives in the golden halls of Edoras. Riders of Rohan make excellent warriors.

AIM

Long ago in the early years of the second age the Elven Smiths forged rings of power: three for the Dwarf Kings, nine for mortal men and seven for the Dwarf Lords. Sauron, the Dark Lord, forged a master ring, the One Ring, which would rule them all, with it he could control Middle Earth. When the One Ring was finished he put it on his finger and the weapons of the other rings went silent at Sauron's arm.

A great war was fought and many died, but eventually Sauron was defeated by the forces of sheer and man. The

Ring was taken from Sauron and should have been destroyed but was it was not. The One Ring fell into a river and there it lay for hundreds of years.

The ring was eventually found by Bilbo Baggins, who passed it on to his nephew, Frodo. Meanwhile Gandalf the wizard had been wandering all over Middle Earth trying to find out more about the ring and not realising that it was the One Ring. As soon as he found out he returned to the Shire and told Frodo that it must be destroyed.

War in Middle Earth begins as Frodo leaves the Shire with his friends Sam and Pippin on their journey to end the ring's magical powers. Under your command his

first problem is to reach the temporary safety of the house of Elrond in Rivendell. The action is played on two levels: the ring quest and a tactical wargame.

THE RING QUEST

The ring can only be annulled in the burning fires, at the heart of Mount Doom's volcano. Frodo must be guided from his home in the Shire to the land of Mordor, realm of the Dark Lord.

The early stages of the game involve getting Frodo, Sam and Pippin to Rivendell in one piece. This is where the Fellowship of the Ring is formed - a sort of elite day team. However, without the lessons in sheep cultivation. On your way you'll join up with Merry and Aragorn and spend so much time avoiding Nazgûl, the most powerful of Sauron's servants, that you'll start wondering whether you would prefer to stop the ring on and disengage altogether.

On the tactical side you have to move the forces of men, elves and dwarves to stop at the end of the day that fight for Sauron and Gandalf, a powerful wizard. Initially you have only a few armies who play your allies, but many begin to respond and war breaks out on a larger scale as Sauron shows his hand.



5. Gandalf the Grey (Bilbo Baggins) leads the night. It's a strong job trying to make sense of the forces of good.

MIDDLE EARTH



1. Frodo plays hide and seek with the Nazgûl. He's just reached Sam Gamgee's house.



2. Orbor, the Lonely Mountain, once home to a red/gold dragon by the name of Smaug the Magnificent. Now the dwarves have it, but if they're unlucky it'll just become another ore hole.



3. Sitting upon his black steed sits one of the nine Ring Wraiths or Nazgûl. Beware these evil beings, they may not look as fearsome in the game as they do on the title screen, but they're not dead.

GRAPHICS AND SOUND

The graphics are in three different flavors — world map, detailed map and the individual location. Arrows on the scrolling world map are only indicated by fading dots. When you zoom into the detailed map you're presented with small pictures to represent each army. There's no problem at all in working out when you've been killed — you flip on the ground and look thoroughly dead.

The main map is scrolled smoothly and smoothly by clicking on a pointer until you feel an army. Zooming in again lets you see impressive detail and lots of colorful scenery. The sprites of the various characters are adequate, but more effort could



4. Middle Earth, a world on the brink of war.

have made them vaguely realistic. All text messages appear in yellowed scrolls which give the game an atmospheric feel.

There are plenty of towns, but the Rings is capable of performing more than you're actually given. Sound effects are average, but in abundance, a few battle sound-effects and a liberal scattering of others are all an effort.



5. The gate to Mordor, within looks Gollum, arcs, and the fiery thing. Enter at your own risk.



6. The first battle of the Hornburg has been won. But will it stand up to more assaults from Saruman's army of the white hand?

CONCLUSION

War in Middle Earth is one of a rare breed of wargames that looks as good as it plays. The computer moves moves logically to your strategy and you enter orders into the map and slowly unfolding story. It'll take you hours to play a game from start to finish on a low Game system comes in pretty handy although a feature to play at half or very half speeds allows you to skip through any tedious battles. However, when it comes to a real confrontation, such as the battle of the Hornburg, you can go there and modify your tactics. If you find you can't land the hell out of your enemies — a common problem — then you'll be able to retreat and come back later like cats to get better.

Gary Barrett

THE WARGAME

A large map of Middle Earth shows the disposition of your armies and those of Saruman. On the close-up map you can obtain detailed information about any army, whether they fight for good or evil and give orders to the good armies. Using the magnifying glass again will take you to a side view of the chosen characters as they walk or ride across Middle Earth. In this mode you receive detailed messages from other characters and can also pick up any objects lying on the ground, for example, an arrow stuck in Sam Gamgee's house.

When a battle takes place you have the option of "going to it" or "ignoring it." Going to the battle allows you to decide tactics which can employed in a limited extent: charge, engage, withdraw or

retreat are the available options — no chance to pull out a bottle of Lutebode though. Once an option is chosen, but both take more time and have a ready tendency to reflect so many lucky casualties you can't help wishing they'd climb into the end of a 150mm bazooka.

The game comes to an end very quickly if a Nazgûl gets his grubby hands on the One Ring. He dashes to Mordor at the speed of light and you can either cross your fingers left get squashed by a lawnmower or alternatively make some attempt to stop him before he reaches Sauron. Other than being about defeat, such as if the Hornburg, an ancient and strategic tower, falls into Saruman's sticky traps — not a popular conclusion.

with graphics	1 2 3 4 5
scrolling graphics	1 2 3 4 5
sound effects	1 2 3 4 5
scrolling interface	1 2 3 4 5
overall 91%	

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YOUR U.S. GOLD STAR

U.S. Gold, way ahead of whoever...

A bright, who was it who said that after completing (SD) the universe would be safe from alien attack forever? Not so, I'm afraid.

Once again you have to go out there and blast those old aliens into the darkened depths of your neighbourhood black hole, but with brilliant graphics the days of the vertically-scrolling shoot-'em-ups have taken on a new dimension.



On the to meet the juggernaut Hybris offers enough alien to blast you questioning the reason for your mission. But the great graphics ensure that this isn't just another vertical scrolling shoot-'em-up.

HYBRIS

DISCOVERY/GAINSTAR (0252 877401)

Amiga - £24.95, Mouse or Joystick. Reviewed.

BT - No version yet available

GAMEPLAY

Who's the little who goes round mowing your spores, the moment you've just them down? And what about all those tanks that you leave for the mered instant, and reap - they're gone within, where do?

Well - and you're going to find this one hard to believe - some idiot has gone and mislaid an entire colony of people. It's not as if they were particularly important people. A bit like Princess Alexandra - she looks good but nobody's entirely sure what she does and it wouldn't matter too much if she got lost down the play hole one morning. However, it's suddenly become vitally important that you find this missing colony - they're probably been discovered to have evaded their poll tax registration, so the Government is going to spend half a million pounds trying to find them again, and you're the guy who's got to wander, bleary-eyed, into an alien and futuristic world.

With waves after waves of alien invaders looking like something out of Doctor Who during the past-decade, it's pretty easy to forget about those missing guys and their tan suit. With your quest taking you across deserts, seas, mountains and seas

and with one alien after another on your tail you can be sure that it isn't going to be a sightseeing trip.

When aliens tear their heads off there's a handy tendency to split into loads of parts and hover around you menacingly. With a special fireover attachment you can ensure they don't get too big-headed. In the event that this contraption should get hit by an alien craft then you're all alone in the treacherous terrain. Only when a large grey fire floats around the screen is there any hope - shooting at it releases another fire-attachment which you need to pick up to use.



With levitation leading you through desert, mountains and seas, shooting the right yellow guys is the only way to survive.

CONCLUSION

Addictive gameplay has been the backbone of every shoot-em-up but this Amiga game has benefited from dedicated graphics and excellent sound effects. It might have been better if high scores could have been used to pick but this is no real problem if your only intention is to coast through the different levels. An installation routine can be accessed by pressing the space bar during loading, here you can change parameters which will make the game easier - or harder if you have some sort of kamikaze mind.

GRAPHICS AND SOUND

Vertically-scrolling shoot-em-ups are so old now that you can almost spot the wrinkles. However, brilliant, smoothly-scrolling graphics and alien sounds ensure that you'll think you've just climbed into an alien's role in a blockbuster combat to make sure that space is not just another outer-space shoot-the-bad-guys-and-smash-an-Ensign-shattering score-type of game. With the action taking place

over the top of everything from palm trees to a moving juggernaut you can soon find yourself addicted.

Sound effects are good as well. Throughout gameplay is a jolly backing music as well as all sorts of spot effects which materialise every time you fire a missile. With an auto-firing joystick this can soon override anything else.

still graphics



moving graphics



soundtrack



loading interest



overall 82%

...s Kissing C
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GAME BUSTERS

FERNANDEZ MUST DIE

ST

To get infinite lives press F to pause the game and then type **cccccccccc** followed by **Enter**. If you run out of mines when you have infinite lives then just get shot because you'll be given another one as soon as the new life appears.

T.M. Morris

**Stratford-on-Avon,
Warwickshire**

THUNDERBLADE

ST and Amiga

First until the game has finished loading, the high score table has come on and the digitized helicopter picture has appeared. Type **a** **Circle** and the screen will flash to show that the cheat mode is active. All you have to do to skip levels is press **Shift** on the Amiga or **Shift** on the ST.

R Brown

Kingswood, Surrey

GARFIELD

Amiga

From the start screen go left until you come to the front door with the cat flap. Pick up the red rubber band and drop it next to the cat flap. Now until **Code** opens the cat flap and then move back to the start screen with the green chair and go through the door. Pick up the torch and go into the back yard. Enter the shed and fall down the hole. Walk right until you come to an alley and then go up it. Carry on right and down until you get to **Level**. You'll need to kick less repeatedly until he drops the mouse and then move **Code** to pick up the mouse and leave the room.

You should then drop the mouse off at the health shop. A speech bubble will tell you you need to take the cat to the vet in the street. Drop him on the street and tell day. Then go to the shed, lock it and pick up the key. Take the key to the park and drop it

If the odds are stacked against you and you're running out of fuel; if your shields are almost gone or you're on your last legs then there's only one cure: **Gamebusters!** More tips here than a milkman gets for his birthday.

THRUST

ST

Switch on your computer and use another disk to get a Disktop and then insert the Thrust disk. Double click on the file icon; you and the game will start as normal. Nothing can kill you except for the power plant when it explodes.

**Warren Marshfield
Ipswich**

PLATOON

ST

If you want to access the cheat mode in Platoon then all you have to do is type **cccccccccc** **Shift** on the title screen. While playing, load one you can press **F2** to travel instantly to the **TRE**, **F3** takes



you to the bridge and **F4** to the all stage. The first casualty of war is cheating.

**Nathan Powell
Beckenham, Kent**

10	CODE
11	JAMES
12	SHANE
13	LIFEBOAT
14	MURDER

**Steven Rhodes
Kiddlington, Kent**

CYBERNOID

IT/Amiga

Press space on the title screen, type in **00000000** to character from the **Dungeons and Dragons** game and **cccccc** and press space again. You now have infinite lives. To go the next level pause the game and press **in**.

**Nathan Powell
Beckenham, Kent**

DOUBLE DRAGON

Amiga

On the title screen type in a **0** **CALLING** in **ENTER** a **0000** and press **Enter**. Pressing **DEL** kills your opponent.

**Martin Moore
Bristol**

ELIMINATOR

ST

Many passwords, this time for Eliminator. First press the **Help** key and then type in the appropriate password for a stage.

Stage	Password
1	ABCDEF
2	GHIJKL
3	MNOPQR
4	STUVWX
5	YZABCD
6	EFGHIJ
7	KLMNOP
8	QRSTUV
9	WXYZ



OPERATION WOLF

ST & Amiga

If you see any rocket launchers, grenades or knife throwers then pick them up first because they cause the most damage. If you see a footage running across the screen then there'll be knife-throwing men chasing him. Cut him down before he gets to the footage or nasty things will happen. On the first level make sure that you've got plenty of ammunition and rockets when you get to the end because you'll certainly need them all. When you see the last helicopter get keep shooting it and fire rockets until it eventually explodes.

Andrew Jackson and Carl Coats
Huyton, Liverpool

HELTER SKELTER

ST
Having trouble finding passwords, look no further than this list.

Level Password

- 11 SPIN
- 21 TUP
- 31 BALL
- 41 GEAR
- 51 LEFT
- 61 TWIN
- 71 PLAT

James Withers
Cheshire, Lancs

PUFFY'S SAGA

ST

From P30 and P30 simultaneously along the game and you'll be advanced to level seven. Press Alt+F to go to level eight, press F again and you'll go to level nine.

T Wang
Bough, Berkshire

NEBULUS

ST & Amiga

On the title screen of the ST version type HELLO I AM JON. You can now change levels by pressing P30 to P30 for the respective levels and gain unlimited pages to

complete the tower. The same applies on the Amiga but type it without spaces.

Michael Judge
Babworth, Yorkshire

STARGOOSE

ST

Press all of the function keys from P30 to P30 and you'll have infinite credits.

L. Chiles
Watford, Herts

MICKEY MOUSE

ST

While playing the game type in 00000000 and a flicking line will appear in the border. You're now in cheat mode. Press P30 to open the door to a sub-game. P30 starts a fight between you and a witch and P30 releases your water pump.

L. Chiles
Watford, Herts

INTERCEPTOR

Amiga

For extra missions type a 1 for two flights and then before you choose which plane you want to fly type 4, 1, 1 or 1 and then the plane type. You'll now be far off the map and must find out what to do next.

Andrew Harbottle
Newcastle-upon-Tyne

CARRIER COMMAND

ST

Start an action game and take over the island in front of you. Go west of the island until you're out of range and set Marta Gm's autopilot towards the centre of the island. Leave it armed and ready for launch. After 37 minutes you'll get a message that the island is under attack. Launch the Marta and you'll fly around the island. On one side will be the enemy carrier.

Daniel Corns
Newbury, Berks

OVERLANDER

ST

Level 1

Select countess million money and fuel up to 14 matches. Hit turbo, four buttoning rams and two flare bombs. Destroy trucks from as far away as possible. Slow down to 1000.00 mph when you encounter barriers and stop in the middle lane.

Level 2

Select helicopter official and fuel M with fuel. Buy a bombarder, flare rams and bullet proofing. After the first blast there are a lot of barriers.

FISH!

ST & Amiga

The first three parts of Fish could be showing you down so here are some tips to get you through to Hydrophile.

Part 1

Get food to make the coffee and then get the tapes from the bar. The tape bar can be found in the cupboard in the secondary control room. Set the amplifier tape in the bar control room to a suitable level and clean the tape heads with the cleaner. Play the tapes in the player and the producer will clean it and using the combination to the cabinet in his office. Get what you find inside it and you've entered the first part of Fish.

Part 2 - The Mobley

Get dressed and pick up the torch from the rabbit in the cub. Head east until you get to the lobby and feed your way to the canteen. Open the sandwich bar and feed the communal room. Go back up to the named transcripts and feed all your lunch. Drag the new part the laptop until it's beneath the only you can climb up this by standing on the bars. Tie the cord to the gargoyle and climb down again. You can pick the card and collect the gargoyle. Put it in its rightful place. Get the geometries from the station to complete part 2. You may have to do this several times thanks to the laptop interference.

Part 3 - Exploding Fennels

Timing is critical in this part so don't waste anytime. Go south east to the entry and see the badge. Return to Mobley (near the bar) and get the disc from the dining when he leaves. Return to the entry and get the book, gloves and mouse. Wear the gloves and place the disc in the machine. Hold it in the fire with long and pour it in the mouth when it starts. Take this to the coal globe avoiding Mobley and anywhere else. Get it out for a few hours. When this is done smash the mouse with the hammer and is in and behind HYDROPHILE.

Scott Charn
Buxford, Essex

Level 3

Select Phantom and fuel to full if you have a bombarder, otherwise fill the tank. Buy rams, bullet proofing, flare bombs and fuel if you need them. The most difficult part is at the beginning, after that it's easy.

Level 4

Select illegal chemicals and fill the tank. Buy the maximum number of rams and bullet proofing. Also get as many bombs as possible. Watch out for the barriers because they'll overtake you and keep your speed down to 90-100 mph all at the time.

Level 5

Choose the president. Fill the tank yet again and buy everything except wheel blades. About £40,000 is needed to pick up this

lot. This level shouldn't cause any headaches unless your car has been fitted with the whole Labrador.

Shaun Aulter
Derby, Wiltshire

WIZBALL

Amiga

If you're having problems getting the childrens filled then pause the game and type 00000000. Unpause the game and now you can press C to fill the children for the level on which you're currently standing. C to complete the level and T to complete the whole game.

Richard Thomson
Cannock, Shropshire

WINNERS AND THINGS

All over the country there are thousands of games players having problems and the only people that can help them is you. Send in your tips and hints to these fabulous prizes. It could be profitable. Why not win? Hold your every month prizes are given for the best tips and hints that have come this month.

The winners this month are: **DAVE** for his Amiga Carpal type and **SHAWN AULTER** for his extensive playing guide in Overlander. ST and Amiga prizes will soon be showing their way through the post.

YOUR OBJECTIVE IS VERY SIMPLE BUT FAR
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PALACE SOFTWARE



You're at the wheel of a Ferrari F40 in a race to smash a stolen car racket before the clock reaches zero and your car explodes – last known who designed these Ferraris. So, (perhaps) this is no ordinary After Delay scam, you've got the whole of a corrupt US cop force behind the racket and they're making you with the intention of turning you into a stolen vehicle with a value order of tens of millions.

You have to survive through four states as you struggle to reach your destination, steering clear of every trap car is right). Even the fastest cars don't appreciate you straggling across their state faster than an antelope on a better diet.

The task at hand is made marginally easier by using the latest James Bond-style car that has been inconspicuously stashed at the top of the screen. Unfortunately, it's so difficult to read at times that you might just as well give it back to old Gilt - he's probably used it just to find his way around the

A route map is available at the press of the F2 key and this lets you know the correct path to follow. With splitting roads appearing all over the



place you have to make sure that you tail along the correct main reference you'll drive straight into a state boundary and confuse

1118

NT = Jacobite, number of total AITs, 1995, 1996, 1997

Year	Number of cases	Number of deaths
1990	1,000	100
1991	1,200	120
1992	1,400	140
1993	1,600	160
1994	1,800	180
1995	2,000	200
1996	2,200	220
1997	2,400	240
1998	2,600	260
1999	2,800	280
2000	3,000	300
2001	3,200	320
2002	3,400	340
2003	3,600	360
2004	3,800	380
2005	4,000	400
2006	4,200	420
2007	4,400	440
2008	4,600	460
2009	4,800	480
2010	5,000	500
2011	5,200	520
2012	5,400	540
2013	5,600	560
2014	5,800	580
2015	6,000	600
2016	6,200	620
2017	6,400	640
2018	6,600	660
2019	6,800	680
2020	7,000	700



1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26



1. *Journal of the American Medical Association*, 1997; 277: 1039-1043.



1000

[illegible]

GRAPHICS AND SOUND

The graphics in *Crash City II* are undeniably good with smooth scrolling and effective falls but it's the splitting roads which leave the most lasting, four-holocaust-angle rear view of the car succumbing in giving you a realistic impression of the road that (unlike) greatly from not.

Looking like the road maker's Indian (almost) from going, it to fit with a multitude of superfluous curves. Roadside centres are fairly minimal although what is there has been well done.



every time you plan the brakes on should probably be cause for some concern, especially since the engine seems to cut out every time you try the red emergency maneuver.

CONCLUSIONS

The racing game isn't the greatest innovation since the use of the armadillo for rugby practice, but horsepower makes them addictive and Crazy Cars II has, too. It would have benefited from a few additional twists - real American highways aren't populated exclusively with cop cars.

A few more levels than the allotted four would have made the game better since the map gives a very clear indication of the correct route. It's almost too easy to succeed. However, it's an addictive game and only the imminent release of *Go! Go! Go!* Outrage Carpool looks set to upset its chances at a home slot.





SWORD OF SODAN

GAINSTAR (0252 877431)

Amiga - Reviewed. Joystick. £24.95

ST - No version yet planned.

It's been causing a sensation in the States, and now it's over here on import.

Massive sprites, smooth animation and lots of screams and grunts abound in this game from the master of Amiga demo programs, Sodan. Armed with the courage of Harrison Ford and only a humble sword you must get to the castle without being floored.

GRAPHICS AND SOUND

It's the graphics which are the game's greatest asset. Backdrops are excellent but it's the use of the sprites that really stand out, the game world definitely sets the game aside from the rest. The creature characters are often as large as 5" which is a major improvement on the big ant-like characters with weird body mathematics and bright red too often seen in the majority of swordfighting games. Wielding a giant sword and slaying offscreen characters into bits of pieces in true Roper style is accompanied by brilliant splatters of blood, but it's being impaled on wooden spikes, which looks best. This method of soft-boon drops up so often you'll think you're in Master Ory's private boudoir.

All manner of opportune grunts and screams make up the sound effects. The occasional burst of sampled speech instantly informs you that you need to hurry at your enemies a lot more if you're going to defeat them but if you can survive the constant criticism from your Amiga then you'll soon get involved in all the action.



By the time you get this far you'll want a rest. The blood screen takes a lot of hard work to reach but a 'play' game' option can then be used to show all the scenes you made.

GAMEPLAY

In a distant age when dragons could become reality and miracles were an everyday occurrence, almost as common as plane crashes, there existed a King who lived for many years bringing hope and joy across to the land. But the people were awakened in a time of darkness when the King was slain by the evil forces. A warrior came to the territory and vowed, by the strength of steel and edge of sword, to shatter Zarac, reign of terror and hence return light to the Northern Kingdom.

You assume the roles of either a male or female warrior and go into the Kingdom armed with the mighty Sword of Sodan, attacking Zarac's allies. Seven different levels take you through a range of landscapes, beginning at the village where the aim is to get through two gates in one pass. The bridge scene is one of the better methods of seeking death. It boasts a set of moving spikes designed to show blood from your leg, or even worse places. But it's the graveyard level which is the most impressive. With howling wraiths and lots of zombies wandering round eating the guests you'll think you're at a Liverpool football match.

Along the way you can retrieve potions which provide extra life or increased sword strength. And the extremely handy Magic Dagger isn't a hallucinogenic fungus but a useful device designed to kill the enemy closer to you, or act as a power shield protecting you from attack for 30 seconds.

CONCLUSION

Americans have raved about Sodan for some time and the graphics really are good. As a demo of the Amiga's clever sprite manipulation, it's indisputably superb but as a game it lacks the qualities to make it great. The levels last just a few seconds and whilst waiting a second might make good screenshots it soon becomes tedious. Obviously Sodan is a fighting game with large sprites and sampled speech, if you like playing your sword into soft flesh and you can tolerate lengthy disk accesses then go for it.



3. Blood thirsty and brilliant



4. Getting it out for domination of the graveyard - is hardly positive if you can survive the smell of rotting flesh and lots of attention from a hair-headed roat.



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CUSTODIAN

HEWSON

ST - £19.95 Joystick or Keyboard. Reviewed.

Amiga - Out at the beginning of March. £19.95

This game's undergone more name changes than Elizabeth Taylor. Notably previewed under the guise of *Kalashnikov*, it became *Custodian* only a few weeks before the release date. It's written by the same company who turned out the amazing *Cyberoid*, and graphically it bears a remarkable similarity.



↳ Supports allow you to rebuff your health at a cost of 3000 points. It might seem an outrageous price to pay for a visit to the doctor's but they also transport you around the level so they're not entirely useless.

GAMEPLAY



You've been assigned to protect the tomb of the wizard who likes to spend a lazy day in front of the TV and doesn't miss being disturbed. With hundreds of aliens looking at his door you just know what your job is. The most select of the alien jobs, located around the different levels and destroy them by wading them off to the post mortem chambers. You failed.

The jobs are an important element of the game. With up to 20 scattered randomly across the playing area they begin life as weak little things but gradually grow, absorbing the energy of the tomb. And guess what happens when the tomb runs out of energy? - lots of noise, millions of departing aliens and a giant explosion means that you don't survive for too much longer.

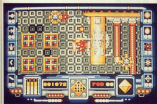
With hundreds of aliens around, all moving in different formations, you need to make sure you attack them with the right weapons otherwise they'll hardly budge their little bodies. Up to ten weapons can be gathered by landing your craft in an ammo pit and pulling down on the joystick. This gets to be worse than landing a jet on the M1, when you're surrounded by millions of exploding tanks.

Individual weapons have varying prices - your credits depend on how many aliens you've dispatched - and range from a simple cowboy style bullet thoroughly useless and not worth the money to a gem of a weapon which obliterates everything on screen with one blast, but costs more than Emperor Hirohito's salary.

GRAPHICS AND SOUND

A dark background with bright explosive effects, fireballs, and some blue quarters materialising at once, the place is the order of the day. With a strange, yet alien and character as your hero and all the impressive *Cyberoid* graphics, *Custodian* looks visually brilliant.

Sound effects are not so great. An option to have music playing throughout the game exists but it's not going to get you too excited. Thankfully it can be turned off saving your efforts reacting with every explosion and providing an unwelcome indication of the number of lives you haven't got left.



↳ The main objective is to protect the tomb without getting hit from the aliens but these guys don't make it easy. Luckily when the game begins you're armed with massive amounts of expendable beams and 3000 credits so your first stop is usually at the nearest ammo station.



↳ The range of weaponry is extensive but it does the trick. Getting your hands on an \$1000 Mining Machine is a great idea, especially when your trigger finger is a bit unreliable after a night on the tiles.

CONCLUSION

Extensive weaponry, a credit system and great graphics are what make this good. Unfortunately there's no highscore table to maintain your giant scores but this game is more about getting through the different levels. Occasionally the scrolling slows down so much you'll want to pick up your monitor and move it to the other side of the table just to remind yourself what movement is, but it's addictive

enough to have your joystick clanking for repair.

Responsory can be selected by hitting the function keys but taking your finger off of the joystick is not a task to be recommended. In no time at all you can find you've lost all your energy and watched from the screen in a puff of smoke - a bit like travelling in a Boeing!



still graphics



moving graphics



soundtrack



loading internet



overall 73%

DREAM ZONE

GAINSTAR

Amiga - Reviewed. £24.95.

BT - Available soon.

Everyone has nightmares at one time or another, but few people wake up to find themselves still in them. That's what you've done and if you don't find a way to escape you'll be stuck there forever.

Your mirror bedroom provides the scene for the game.

Your first task is to wander around upstairs exploring the landscape.



This gives you the chance to locate objects useful later on in the adventure. When you're satisfied with what you've found then the next step is to go back to your room and sleep. The digitised black and white pictures which make up the waking part of the game are then replaced with less-impressive animated colour sequences.

What you're in the colourful world of dreams you come across some strange things: similar locations, puzzle elements and strange habits. The gameplay occasionally features frustrating frustration obviously designed to give you a taste of a polka dot farm. A trip to the GOC can find you spending all day stunted from one room to another in your search for an elusive form. This can become extremely annoying and more imaginative problems are definitely needed to maintain your interest.

Dream Zone is a graphical adventure featuring digitised



a. I'm not that desperate to go to the top!

pictures of your location. Objects are shown as small pictures but these are not digitised. The graphics are functional allowing you to click on portions of the picture and find out what they are. Double clicking provides more detailed information.

Information

There are two methods of interacting with the game: either via a row of icons consisting of the more commonly used options or by making use of a simple command line interface. Apart from the graphics it's a standard adventure with the usual interaction between characters and objects.

All in all it's not a bad game

with some good graphics and even a tune, but the problems are just too annoying to keep you interested. Character interaction can be limiting with offending characters only avoiding you if you find help there - no place for the wicked at heart.

Gary Barrett

still graphics	8.5
moving graphics	5.0
soundtrack	3.0
loading interest	3.0
overall	65%

LAST DUEL

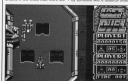
US GOLD

BT - Available. Reviewed. £39.95.

Amiga - Out at the beginning of March.

Fat off, in the middle of a Back Rogerian future where there are more planets floating around in the skies than there are

clouds of acid rain, there were two planets, born in the middle of time. These planets were named - by someone with a doubtful under-



a. The P-tanks give you access to a range of different weapons. These can have you shooting missiles upwards, left, right or even at three - Wily-Wily, eat your heart out.

standing of the alphabet - MU and BACULA. Unfortunately the BACULA tribe have decided to take over the planet MU and have kidnapped the curiously-named Princess Fleets for reasons which we shall delve into later deeply.

During odd-numbered levels you are in command of a custom designed, rock-solid three-wheeled car, whilst the second player (P) operates a similarly equipped plane. In the other levels you take control of a hovering spacecraft.

Last Duel is spread out across six different levels which, in true P-Type fashion, incorporate some kind of fearless monster at the end. These range from large, foot-crushing dragons right down to a giant mechanical crab.

You can accumulate weapons during play by shooting at and then collecting the P scores. These occur fairly regularly and increase the number of missiles you can shoot out with one tap of the fire

button. Other items also exist which allow you to fire a number of multidirectional missiles, thereby increasing your chances of survival.

Last Duel is another release from Hyper, the people who created Rasterblaze. It's not in the same league but that doesn't stop it from being a fairly good release. The graphics aren't brilliant and I wouldn't win any prizes for mouse fire techniques but being a vertically scrolling shoot-em-up, it's the type of game that'll last you hooked for hours.

Mark Highten

still graphics	8.5
moving graphics	8.0
soundtrack	8.0
loading interest	8.0
overall	63%



GRAPHICS

THAT'S ALL FOLKS

What do you do once you've drawn lots of pretty pictures? Why, you could bring them to life in good old Walt Disney tradition. And that's without even lifting a pencil. **RICHARD MONTEIRO** looks at the latest offering for would-be animators for the ST and Amiga.

CYBER PAINT 3

\$69.95, \$14.95 upgrade from v1 ■ STs with 1MiByte or more required, low res only ■ Electric Dist., Meadow Lane, ST Inn, Huntingdon, Cambs, PE17 4LG (0480 486789)

Look safe, ST owners, an animation-com-paint package for your machine that will turn Amiga screens green. Cyber Paint 3 is two programs rolled into one. It offers extensive drawing options found in many art packages and also animation facilities for creating your own computerized cartoons.

All conventional drawing operations are performed on a standard-size, low-resolution screen. Logically, most of the painting functions can be found in the 'Draw' menu - from here you can draw lines, stroke lines (useful to draw except the result looks rougher to give a sketched appearance), spray a random distribution of pixels, use an airbrush, fill, draw rubber lines, create polygons and other shapes, and write text.

Arrows, although similar to the

■ A powerful feature in Cyber Paint lets you take a single image and manipulate it in many wonderful ways. For instance, you can make your images describe elaborate paths. These frames show just what is possible. You simply draw one picture and let the computer fill in the rest. Move most in any plane and anywhere on the screen is also possible.



very feature, lets you define the speed and the spread of your brush.

Sooty and sweep

There is an array of 16 brushes for you to choose from when attempting most drawing functions. You can also define your own. It's possible to grab a section of screen (35 by 35 pixels) and use that as a brush. Unfortunately brushes can only be one colour, although you can of course copy blocks of the screen separately.

Shape drawing is incredibly fast; the speed is maintained no matter what size the shape. If you've got a letter attached then things really shift.

The Windows menu allows you to make subtle changes on items drawn on the screen. For instance, shapes can either be filled or outlined, every item of the same type (box, clip) can be separate or connected, and shapes can be forced to pass through a center point.

Only 16 colours can be on screen at once as the screen is always in low resolution mode. When you're handling the palette, you can

select two colours, say light red and dark red, and have the computer fill out the shades in between - multiple.

Writing on the wall

Text can be written to screen using the standard system fonts or special (2005 fonts) are provided. Text styles include outline, bold, italic and underline. Text size is measured in points (1/72 of an inch) and ranges from 1 point to 100 points. Font size is limited by the available font - system or customised. There is no need to load GOSOS as Cyber Paint can load random fonts without it.

From the Clip menu you can cut, paste, move, rotate, stretch and insert blocks. By placing a sub-image into the clipboard and then using paste it is possible to get a multi-coloured brush effect.

Move it!

There are several ways of animating a picture. One of the simplest methods is something called blurring. (Blurring is a fancy taken offset printing, when the printer's camera won't pick up a particular shade of blue so it is used

RAM UPGRADES

Animators take up bits of memory - the more you have the more you can do. On 68000 and 68010 you generally have to wait about nine months if you want to up to the 1MiB capacity. Perceptics Peripherals in the States sell a 1MiB-capable RAM board (computer board) which can accept up to 2.5MiBytes of RAM for either the 530 or 540 microprocessor from 1 to Mary's Court, Birmingham, UK B26 6B, UK, (0121 817 288-2917).



■ Cyber Paint's work area for preparing your still drawings. It operates on standard 16K screens. Other Resolutions or Modes can be loaded and edited using the many painting facilities. Finally they can be animated using a variety of techniques.

CYBER HEAT TRICKS



■ The normal picture - a drawing of Marcus & Thompson in their Lullabies - before hitting it with Cyber's pixel perturbation.



■ 'Distortion' does just that - 'distortion' does a similar job, but the results are more subtle.



■ Here's an interesting effect - 'Outline'. All these options can be carried out on one frame or all frames.



■ A hue wave can be applied to the screen by using 'Hue', and get look at the results, incredible.

to mark outlines, and others. This facility is used in CyberPaint to show you the ghost of the previous frame so that you can draw the next frame slightly differently. This method can't deal for animating large objects as the gap between frames is small.

Feeling got it name from the early days of animated cartoons. Typically a master animator would only draw the primary positions of a figure. For instance, Mickey Mouse with his arm outstretched, then bend at the elbow and finally with his arm pointing at the sky. An apprentice would then fill in the missing frames - the 'inbetweens' or 'tweening'. The same function is available in CyberPaint.

When active, Tween takes the beginning and end positions of your cut or clip buffer contents and interpolates the movements sequentially across your frames. Once you've got used to the power of tweening, you won't want anything else. Tween works on rotations, panes and stretches.

Hunting rabbits

The most powerful animation feature found in CyberPaint is 'ABO', Apple Digital Omnimover, which lets you manipulate drawings in very sophisticated ways. You can enlarge or shrink portions of your animation and make your images describe elaborate movements, and manoeuvres.

Imagine you have a single image somewhere on the screen. You can define how it looks - that is, in X, Y and Z axis - as well as its movement (whether it rotates or expands), and the path your object takes. These facilities, which naturally remove a lot of hard work for you, can gobble up memory if you're not careful. Before you get your work into oblivion, or suffer frames, you can preview the object's path. When you're satisfied, simply hit the 'render' button and CyberPaint does the rest.

CyberPaint 2 is excellent. The drawing facilities are on a par with those offered by MacDraw - and they're much faster. Famous point

FILE FORMATS

CyberPaint uses 18 different types of file format. Some are simple screen dumps - for instance, PICO and P14 for loading MacDraw and PageMaker respectively. Others - the .ABO, .ABT and .ABF - are suitable for loading or saving entire animations. There's also the .ABP type that handles colour information. .CIB and .BIL. There's even a colour palette file which uses the .COP extension. Finally there's the .ABO file type which holds the settings of the .ABO file menu. Please!

ALL THAT GLITTERS IS NEW

For those contemplating upgrading from the earlier version of CyberPaint, here's what has changed:

■ Paint (v) is the Mac's main, it provides the most exciting addition. This lets you perform all sorts of image plane-based operations on individual frames or all frames in an animation. For instance, you can rotate or flip images, remove the gaps from lines by using the 'unify' facility, zoom in and out, and zoom over the screen, shift every other one line one pixel in the opposite direction and have white lines also have outlines.

■ Each frame can now be assigned a different palette.

■ Two disks are provided: disk A contains the main program file while disk B houses tutorials, demos and demos files.

■ The 'render' function in the 'Project' menu works differently depending whether the RGB or HLI system is in use. Range averages colours between the selected colours.

■ The 'mix' has been introduced. You get 26 dyes which need to be placed into various parts of the old mix out.



CYBERPAINT 2

for

- Pixel effects and outward ring
- Complete flight and motion paths for objects possible
- Shape drawing is very fast
- Good manual

against

- Low resolution only
- Screen can't be played using with animations
- Screen only has one level of magnification

features

1 2 3 4 5

performance

1 2 3 4 5

ease of use

1 2 3 4 5

compatibility

1 2 3 4 5

format value

1 2 3 4 5

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A TALE OF TWO SHEETS



Once the poor relations of business life, spreadsheets have become more and more powerful of late. **DEN TAYLOR** weighs up two new high-end offerings.

Once upon a time, long ago when Britain's business of trade figures were actually in the black, spreadsheets were little more than a book. Your computer, it would not likely have been an Apple II or Commodore PET, would show you a grid of cells, into which you would put numbers, and add them up in columns or rows. In short, an extremely unexciting for doing sums.

I look at a spreadsheet today and pull myself below my eyes. The only thing that hasn't changed is that you still work with lettered columns and numbered rows. You can display tables of figures as graphs, use it as a database to search for particular data, write accounts programs... oh, and you can add up numbers, as well.

The virtue of a spreadsheet is that once you've loaded up the figures for your annual budget you can gaze and gaze. My God, that's disastrous that happens if I force John's figure down by 10%, "... keep one cell's contents and instantly that change is reflected in the totals. Great for what-if financial planning.

K-SPREAD 3

£59.95 to £89.95
Kuno, 12 Horwath
Park, Pangbourne,
Berk. RG6 2JW
(07387 4335)

Runs on one of the ST and Amiga's strongest supporters as a business

machine, and they've got a wide range of R-branded products.

On running K-Spread 3 you are faced with a window ruled, as you'd expect, into the traditional spreadsheet grid layout. However, the number of cells you can see is small (13 rows by 7 columns initially) because wondrous icons are also on the screen: a bank card, a clipboard, a disk drive and others.

The large number of menus at the top all have a good range of keyboard equivalents using Control or Alternate, so as you get used to the command structure you use the slow mouse less often.

Most spreadsheets allow you to click at the cell you want to edit and click the mouse — on K-Spread you have to hold down (Alternate and click, otherwise it takes the click to be a range definition for copying. Ultimately you'll get used to it, but it seems a strange design.

Block copy and move commands are very well implemented. Drag the mouse over the range to be copied and it will be highlighted, then drag that range to the Clipboard icon or another cell — nice and simple with no fancy logic.

Calculation speed is pleasantly responsive, even on large spreadsheet sheets, and one nice layout feature is the ability to alter the height of a row as well as the width of a column on the screen. If you're wanting to do

heavy maths (in a lot of figures, 6-K-Spread has a wide range of statistical and trigonometric functions, including matrix calculation capabilities and matrix inversion. You can combine standard functions into your own user-defined ones.

A good range of 'database' commands let you store text in cells then

WHAT SHOULD YOU EXPECT?

When you're weighing up which spreadsheet to buy, look for some of these features:

SPEED. You'll want to know that with a thousand figures floating around you can be punched pretty fast. When you alter the value of a particular cell, a good spreadsheet will also recalculate the values of the rest of the sheet as fast as you can type.

GRAPH. A picture is worth a thousand words. Present your monthly sales figures as a bar graph, and your reader will understand more instantly.

DOUBLE RECALCULATION. A necessary trick to ensure your spreadsheet data is self-consistent — see the computer illustration for details.

CONVERSION. For example, the ability to set the cell to display the text 'Credit' or 'Debit' depending on whether the figure is whether cell is positive or negative.

TEXT/NUM PRINTING. Even a simple spreadsheet can be far more than a sheet of A4 paper. Good programs let you output statements in continuous, tabular or fully readable printouts.

Database. On larger sets of figures, a database-like search command will let you find what you want fast.

SCREEN. Most will allow the power user to define a complex series of keyboard commands as a single keyboard, eg. 'Go one cell down, add one, go one cell right and multiply by 1.15' allows a one-key programming language for customising your applications.

K-SPREAD 3

for

- Width and height of cells can be adjusted
- Friendly mouse-driven block copy commands
- Good range of fast arithmetic functions
- Find/replace database facilities

against

- Must buy extra programs for graphics output
- No macros in standard version
- No double recalculation

Features:

1 2 3 4 5

performance

1 2 3 4 5

ease of use

1 2 3 4 5

macros

1 2 3 4 5

format value

1 2 3 4 5

A file screen like mine has just that: **FILE SCREEN**

FILE SCREEN

File Name	Size	Date	Time	Access
1234567890	100	12/12/88	10:00	Read
1234567890	100	12/12/88	10:00	Read
1234567890	100	12/12/88	10:00	Read
1234567890	100	12/12/88	10:00	Read
1234567890	100	12/12/88	10:00	Read
1234567890	100	12/12/88	10:00	Read
1234567890	100	12/12/88	10:00	Read
1234567890	100	12/12/88	10:00	Read
1234567890	100	12/12/88	10:00	Read
1234567890	100	12/12/88	10:00	Read

K-Spread 3 has a curious desktop-like screen with clipboard, disk and trash icons as well as menus. This does reduce the usual work area to 33 rows — more could have been used. On screen is an example of the database facilities at work.



THE FIRST SPREADSHEET



Spreadsheets are a relative newcomer to the computing scene — the first one was only devised in 1979, by Harvard Business School graduate Daniel Bricklin. It was called VisiCalc and ran on an Apple II computer.

count the number of people over 40 last, or otherwise analyze the data. The MKT function can ask the user to type some input, and a cursor can then split the info your database storage cells. Likewise printing is also supported.

But despite a slick interface, there's a lot missing from K-Spread. There are no macros, no tabulars on disk, and if you want to get graphical output of your results you're restricted to less K-Graph at only a cost! Worse, the sheet is not double-recalculated, so your data can become inconsistent. An add-on pack for £20 or so is promised for a couple of months time offering, macros, improved sideways

THE SPEED TRIALS

To test out the raw number-crunching capacity of K-Spread 3 Superplan and various other spreadsheets we could get our hands on, here's the test we designed: put a number in cell B1, make B2 be A1 plus 3, then B3 be A2-1 and so on to B200-A199-1. Then call B1:K200:K1, K200:K1... and so on until there were 2000 calls, each worked out by adding one to its predecessor. Then when you hit the enter of A1, how long does it take for the change to ripple through to B200?

K-Spread 3	MP Professional	OptiCalc	GraphiSheet	SuperPlan
37	37	17	31	Average
5.84	18.14	1.46	30.25	

* OptiCalc doesn't complete the calculation since it won't allow more than 81-based cell references, rather than the 2000 required.

printing, and a format designer, but these ought to be standard features. K-Spread is powerful and fast at

its basic maths, but Brink hasn't given it enough extra bells and whistles.

SUPERPLAN

£69.95 Average, 1Mb required & Precision, 5 Park Terrace, Worcester Park, Surrey KT4 7BN (01-899 7166)

Precision are probably the leading UK-based things software house, best known for their Superbase databases. Their first spreadsheet, Superplan, is a scaled-up version of Genial's

LogiCalc, and Precision have enclosed the first-time user by including an 1 megabyte of memory — an increasingly common requirement for a serious things user.

Before you can run Superplan you've got to plug a horrible tape protection dongle into your joystick port. Once going, you're faced with a screen split into a standard spreadsheet grid and a command area. Superplan betrays its origins by its non-WIMP command structure. For example, to load a file you type -L, rather than a standard requestor box listing files on the disk appearing, you then have to type the file name. Very IBM PC.

Let's take it as read that Superplan can do all the stuff as K-Spread 3 — conditions, calculations, block copying and a search/replace database section... what does it offer that's new?

There's a wide range of graph functions, allowing you to present tables of data as bar, pie, line, scatter or comparative charts. A complex macro language lets you write any function you need to and tie it to a command name or keyboard; a tutorial disk with the program shows macros to set up rolling dimes. One unique feature is a set of project plan-

ning functions — you can set up a table of times for a sequence of jobs, then plot a critical path through them or generate a Gantt chart. Loads of statistical, mathematical and calendar commands give you just about everything you need, as long as you can remember their names. The format window isn't as fast as K-Spread on the ST.

Sideways printing, and double recalculation are standard, but can only you have to press T to force a manual recalculation of your data. (You can do it automatically too.) The Superplan manual is chunky and written as a reference rather than a tutorial — you'll need spreadsheet experience to get going.

The bad news is that Superplan is designed to use because of its poor use of memory. Our review copy was a little fragile when it came to printing graphics and calculating forward references, but Precision assure us that the protection version is robust enough even for Amiga Schnerrengring.

Superplan should become the standard Average spreadsheet — it's got all the functions you could possibly want, but it did look slightly rough at the edges currently. ■

■ The Double Recalculation problem. When a spreadsheet works out its cells, it goes top left to bottom right. In this screen, cell C2 is B1+1, and A2 is C1+5. Because A1 is worked out before C2, when B1 is changed C2 is set up using the wrong value of C1. Systems with double recalculation make few errors of the data is OK in these forward references and make sure the data is correct. K-Spread 3 doesn't do this, so you've got to make sure your formulae don't refer to any cells below and to the right of the current one.

SUPERPLAN

for

- Wide range of graphics functions.
- Lotus-style commands make Macros easy.
- Calendar & critical path time planning functions.
- Find/replace database facilities.

against

- Needs 1Mb of RAM.
- Poor use of memory makes difficult to use.

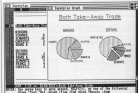
Features

performance

ease of use

macros

format value



■ One of Superplan's strengths is being able to display indigestible tables of figures as comprehensible graphs.

MASSIVE DISCOUNTS

(ALL PRICES INCLUDE VAT AND COURIER SERVICE)

PHILIPS 9833 STEREO COLOUR MONITOR inc. Lead (ST/Amiga)
ONLY £229.00

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Word Works V2	£59.00	Data Manager Prof.	£59.00
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Animator 3D	£59.00	ST Replay 4	£89.00
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Comic Artist	£59.00	S.T.U.S.	£22.50



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Tel (0423) 526322





SAMPLING SEQUENCERS

CHRIS JENKINS looks at two MIDI sequencing packages for the ST. One's possibly free while the other is like nothing you'll ever have seen.

DEALER DEAL

Most manufacturers who claim to have supported the ST in times when only the music applications seem to be going are better than most are spending their chance to sell specialist packages to computer musicians. However, a MIDI sequencer may well be a one-off purchase for many people. So with a few copies of Twelve are available only from dealers included in a single license distribution. This software package alone is available from most dealers at a cost of £225.

**Steinberg
Twelve ST
£125 ■ All STs ■ Steinberg
Research, c/o Envidio
Soundworks, The Studio,
Church Street, Stonefield,
Oxford, OX7 3PS**

You wouldn't think it was possible to create a controversy by releasing a MIDI sequencer package for the ST, after all, it's been done many times before. But Steinberg's Twelve program has caused loads of protest from rival software manufacturers, it's being given away free with 1040 STs.

The first point to make is that Twelve is in many ways just a cut-down feature-track version of Pro-24, which can claim to be the industry

standard for software sequencers. And which costs £285 in its latest version (3.0).

Twelve comes on a single disk, with a ring-bound manual in a slipcase. It runs on any ST in mono or colour, and uses GEM throughout. Its screen layout, with the File, Pattern, Track and other function menus at the top of the display, will be immediately familiar to Pro-24 users.

Track record

In the top left are the twelve track buttons, each with a box showing its on/off status, whether recording mode is selected, and the MIDI channel on which its note data is being output. To the right is a track information box which shows the name and number of the track currently selected, the current pattern number and name, and the start and end points.

There are four other main features

on the screen: one which shows the current tempo, timing and synchronisation internal/external options; a tape transport style control panel with Record, Play, Fast Forward and position counter; a Quantisation display showing the note definition of the recording/playback process; and the location, which allows you to set start and end points for a pattern.

Once recorded in real time or solo time, patterns can be played solo or together, delayed, muted, transposed or copied. A series of 70 markers at the bottom of the screen jump to indicate the velocity from cut-out of tracks as they play. Unwanted system-exclusive information such as pitch bends, aftertouch or pressure can be filtered out to save memory in the recording process.

Twelve has no real surprises a store; it's a perfectly normal tape recorder-style program which offers all the facilities you'll need to start off in MIDI sequencing. There are subtle touches: a score editing display which shows more information on conventional musical staves. Even best you can still cut mistakes by entering new note lengths and values using the mouse.

BIG BROTHER IS WATCHING

Steinberg's Pro-24, the big brother of Twelve, was one of the first professional-standard MIDI sequencing packages for the ST. It's claimed to have sold 32,000 units, and is in use in all sorts of small and large studios throughout the world. Based on the idea of the computer as a 24-track digital tape recorder, it features many options: overdubbing, editing and manipulation options not available on Twelve. Pro-24 has lower internal control times and is one-up to version 3.0. Files from Twelve can be loaded into Pro-24, and vice versa. It's also possible to load files from Twelve into Master Score, Steinberg's £225 music notation package.

Features

features	1 2 3 4
performance	1 2 3 4
ease of use	1 2 3 4
reliability	1 2 3 4

format value

format value	1 2 3 4
--------------	---------

for

- Compatible with Pro-24
- Games free with drive 1040s
- Incorporates manuscript-style staff display

against

- Only 12 tracks
- Individual approach to musically sequencing
- The format not named as other sequencers



Twelve's score editing display. This is where you come if you want to tidy up a previously recorded pattern.



Steinberg Twelve's main screen on display. Up to 12 tracks can be used for sequencing notes from various instruments. It performs as good as it looks.

Don't stop the dance

The dance song function allows you to create entire compositions by organizing the patterns in order; this doesn't stop you from recording a long take which runs across several patterns.

Perhaps the most disappointing aspect of *Twelve* is the manual. After all the criteria listed at the status of early versions of Pro-32, the 10

manual showed distinct improvements which promised to make other manufacturers look up and take notice. Unfortunately, Twelve's manual is nowhere near as good. It tries to be elementary, but ends up being patronising. There's no index and the tutorial has stains. If control command sequences with no explanation as to what's going on, Nor much help for the novice.

The final verdict, then, must be that *Twelve* is a good entry level sequencer if you are happy with the tape recorder analogy which has always been the major feature of Steinberg's sequencers. Personally I'd look at Hybrid Arto's *Early Stage* or Cernus' *Studio 24* before spending money on Twelve - but if you're getting it free with a JOMI, it's an offer which is hard to resist. ■

MIDIgrid ST

£134.00 ■ At 87% ■

Composers' Desktop
Project Ltd, 11 Kilburn
Road, York, YO3 4DF
(0904 623605)

How class. Can you tell me the major disadvantages of MIDI sequencers for musical performances? That's right, they can't perform. All you can do is record your MIDI sequence, then sit and listen while the sequencer plays it back. There's no element of improvisation while it plays, no possibility of exposing or rearranging the performance. MIDI sequencing is ideal for the studio, but hopeless for really creative live performances.



■ The performance display offered by MIDIgrid. Nothing to the beginner? You can close you know what you can do, you won't want anything else. Clicking on the notes causes notes to play from the synth.

Now there's an alternative, a live performance sequencer which allows you to play the computer/MIDI system as if it were your personal musical instrument. It's called MIDIgrid.

The program, which operates in high resolution, comes with an excellent, step-by-step manual. The basic format of MIDIgrid is a grid of bars on the screen. You play your synth by dragging notes, chords and sequences to each bar, and use the mouse to 'play' them.

MIDIgrid uses a RMP control system, but it's not exactly RMP. Some of the icons are distinctive, you have a live-in manual system of mouse-tapped icons and the program uses stage lighting horizontal lines.

Circles and squares

You can load predefined grid patterns and you'll find that moving the square cursor around the screen and clicking the left mouse button causes your MIDI synth to play single notes,

chords, and even short sequences, depending on the number and pattern of track squares in the bars.



■ MIDIgrid's system display. From here you can select the number of bars in a grid, the keyboard range, where the mouse pointer boundary lies, and the speed of sequence playback.

A set of icons at the top of the screen let you to tailor the performance characteristics to your requirements. The first, a keyboard, allows you to place notes in the grid. Selecting it causes a keyboard to appear at the top of the screen. Up to 16 notes can be chosen and placed in a grid box. Notes can be copied, deleted, exchanged, edited or moved. You could, for instance, set up a whole scale, a series of solo notes in different keys or a series of chords in a melodically pleasing sequence.

The next step is to select the required instrument sounds. This is done using a slider bar. Because different synths use different patch naming systems, there could be little point in putting numbers on the bar. The idea is simply to move the cursor along the bar 'auditioning' different synth sounds you find the one you want.

SEE ME

You're now ready for a performance. Clicking the left mouse button on a box plays the appropriate note or chord. The notes play as long as the button is depressed, and even if you move to another box. If you press the right-hand button and mouse the cursor, rapid runs of notes emerge. In this way, you can hit a chord, play a quick run in a series of solo notes, hit the next chord, and so on. In the hands of a practised performer, the results are astonishing.

By clicking on the Record icon, you can record your performances and store them in bars where they appear as lines rather than separate

notes. Clicking on the bar replays the sequence, and since you can have the same sequence repeating up to eight times simultaneously, you can build up stunning 'cannon' effects. Sequences can stop automatically when they reach their end, or you can tell them to loop continuously. An entire setup - grid, notes, sequences and all - can be stored as a RMP file.

There are dozens of demands that can be entered within MIDIgrid, such as number of bars in the grid, keyboard range, mouse pointer boundary and speed of playback.

There are two major problems with the MIDIgrid. The first is lack of any onscreen bar labelling - this makes the program incredibly difficult to cope with until you have used it for some time. The second is that it's such a revolutionary concept that it really needs an experienced demonstrator to put the point across. If you're into MIDI, but frustrated by the limitations of ordinary sequencers, this could be your program. ■

MULTI-TALENTED

Because MIDIgrid lets you assign notes to any of eight MIDI channels, even combining notes from different channels in the same bar if you require, it's ideal for use with multi-channel synths such as the National MT32, G500, Ponder SX12 or Sound XL.

EINSTEIN A GO GO

MIDIgrid is a product of the Composers' Desktop Project, a very high-powered theoretical music research group more usually concerned with subjects such as Karpis-Boring plotted string algorithms, granular synthesis and exponential spectrum encoding. The Project also produces the CDP Workstation which includes the SoundDesigner PCM digital sound converter, Sony PCM digital sound recorder, hard disk unit and Composers' sound analysis and synthesis software. It's aimed at academic, research and educational institutions. The machine uses software such as Csound and Chord and works across three VAX microcomputers, for which the programs were originally written. Fortunately obtaining it is straightforward enough to be undertaken by non-academic types.

for

- Unique live performance functions
- Software freed you from having to use music keyboard
- Ideal for use with keyboardless synth modules

against

- Initially difficult to understand
- Demos' other editing facilities of conventional sequencers

Features

0 1 2 3 4 5

performance

0 1 2 3 4 5

number of bars

0 1 2 3 4 5

multichannel

0 1 2 3 4 5

format

value

0 1 2 3 4 5



FINDERS KEEPERS

Don't assume that an organiser will impose your memory because it won't. But it does mean that you haven't got an excuse for forgetting a birthday or a dinner appointment (two great reasons for not using one). If you ever find a fluff in lying around unattended then it's worth remembering that some people just live with that one, so be kind and return it to them and they might reward you. If they don't, then they'll match under it and they'll soon start searching through their pockets for a little gift (handmade) is such an ugly word.

If you have trouble remembering appointments, birthdays or even the day of the week then perhaps a personal organiser would be a valuable asset. In that case, **GARY BARRETT** certainly needs one.

Since the dawn of time (and since puppets created out of the primordial swamp) there have been fluffans. These magical totems hold magic, tunes and powerful enchantments (telephone numbers and addresses to meet people) along with all sorts of other things including a calendar, an underground map, a diary and a notebook.

The idea of the fluff is that you



could keep all of your vital information in one place so that it was always at your fingertips. Unfortunately there's a side effect: if you lose it then everything goes and you're up the proverbial creek without a paddle.

DAATAFAX

£49.95 ■ All 55s ■

Kempston Data Ltd, 21
The Forum, Linford Wood,
Milton Keynes MK14 6LY
(0908 637886)

Extra paper ■ White £9.95
for 250 or £14.95 for 500
Also available in pastel
blue and pink £9.95 for
250



Spent the box of the DAATAFAX and what do you find? A box, a manual and a handful of sheets of toilet roll. Strange thing to find with an organiser! No need to panic, it is in fact some paper for printing out fluff-compatible pages. There are also some page separators, made of equally fluffly stuff.

There are five sections to DAATAFAX: notebook, diary, phonebook, calendar and graphics.

The notebook is used to write those important little messages and any text can be easily amended. If you want to list a particular word, 'hair' for example, then you can list all occurrences one by one. Printout from the notebook section is in condensed text, so you get about 50 characters per line.

If you have trouble remembering meetings and the like then you might

find the diary useful. Diary pages can be of three types: a page per week, two pages per week or a page per day. You can set the 'highlight' option, which means that any date you highlight in the diary will also be indicated by an asterisk on the calendar, a handy memory pager for those more important activities. It's possible to link to any date quickly.

One of the most useful features is the telephone book which also stores addresses and has space for a one-line note (20 characters) in each entry. There's one page for each list



■ DAATAFAX's diary - no excuse for missing an appointment with the doctor... unfortunately



■ DAATAFAX can cope with pictures too.

ter of the alphabet, but extra ones are added as required. Searching through for a particular name is simple, but it is fiddling through a cover address book.

Next comes the calendar which is laid out over four pages, three months to the page, any part between A.D. 1 and 1999. Important diary dates can be highlighted in reverse in the Diary.

Finally there's the graphics option which allows you to load Picomem, Segas and JAG files. There can't

HORSERS FOR COURSES

In which of the two challengers, **DAATAFAX** or **Day by Day**, will help you organise your life the best?

Day by Day relies on the fact that you use your computer every day, and look at the summary you have stored for yourself. **DAATAFAX** is more geared up to preparing data for storing in a ring binder, so you can carry it with you when you go away for a week or so. Which system you prefer depends on your own pattern on computer use.

If you only use organiser-type facilities rarely and you've got the **Day by Day** Super Pack **Day** organiser, then you might as well stick with that. If you just can't resist organisers then **DAATAFAX** is the most flexible choice, giving you fluff-compatible printout in the most convenient computerised searching - but unfortunately it isn't out on the floppy yet.

Features

performance

ease of use

range of use

reliability

format

value

DAATAFAX

for

- Simple to use
- Easy to edit text
- Can get a hard copy for your fluffan
- Graphics can be included
- Search facility in all sections

against

- Paper will tear easily in a heavily threaded fluffan
- Need an art package to create any pictures



Abstract

Don't assume that an irregular beat and irregular group means any form of *it* is *it*, but it does mean that you haven't got an excuse for forgetting a birthday or a dinner appointment (these good reasons for not using you). If you were told a *that* is being around remembering that is worth remembering that some people can't but still can't see, on the first and (what if it is) and they might want you. If they don't, then find a reason: either it is and they're not *that* something through their parents for a little gift (what if it is) or not.

If you have trouble remembering appointments, birthdays or even the day of the week then perhaps a personal organiser would be a valuable asset. In that case, **GARY BARRETT** certainly needs one.

Since the dawn of time, food waste papers crumpled out of the primordial soup! There have been billions. These magical papers hold magic: names and powerful enchantments. Telephone numbers and addresses to reach people along with all sorts of other things including a calendar, an undegraded tree, a dog, and a cat.

© 2000 Blackwell Science Ltd *Journal of Internal Medicine* 247: 399–406

[illegible]

On records of the last challengers, Trevett as they go they will have been engaged since 1994. How good?

Stay by Stay relies on the fact that you and your computer never link, and look at the comments you have entered for yourself. Thanks to it, more power is in preparing them for doing in a very limited way you, not using it with you, where you go away for a while or so. Which makes you (either directly or just via others) an independent user.

If you only use regular-type facilities rarely and never get the 87 Series, think type organisms that are bigger or well stock and that, if you just don't want organisms that function in the most flexible cases, giving you the competitive power as well as increased computational searching - but unfortunately it isn't out in the 87 Series yet.

[illegible][illegible]DATAFAX
for

- Samples to use
- Easy to edit text
- Clear path to final copy from your drafts
- Graphics can be inserted
- Overlaid printing is off

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GET ORGAN

could keep all of your vital information in one place so that if you downed or your laptop died, understanding there's a safe effect. If you lose it then every thing goes and you're up the proverbial creek without a paddle.

Discussion

Abstract

Competition Data Ltd, 23
The Forum, Linford Wood,
Milton Keynes MK14 6LY
0908 617000

Extra paper ■ White \$2.95 for 250 or \$14.95 for 500. Also available in pastel blue and pink \$2.95 for 250.



There are two sections to *Callithrix* catalog, first, general books, reviews and sections.

The material is used to write letters, messages, etc. and is also used for the production of books, newspapers, etc. It is a very important material in the world of communication.

100

find the diary useful. Diary pages can be of three types: a page per week, two pages per week or a page per day. You can set the *highlighted* option, which means that any text you highlight in the diary will also be indicated by an asterisk on the calendar, a handy memory trigger for those more important activities. It's possible to view in any date format.

One of the most useful features is the telephone book which also stores addresses and has space for a one line note (20 characters) in each entry. There's even space for each in-



■ **Contract not a threat**—no excuse for missing an appointment with the doctor, says [contractor](#)



Keywords: social support; coping strategies; depression; anxiety

part of the alphabet, but extra ones are optional and required. Searching through for a particular frame is simple, but so is fishing through a paper address

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

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GETTING ORGANISED

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be printed out as floXas pages. Now you can have a computer double check freely in your organiser along with useful diagrams and maybe even digitised pictures of your mother.

The only thing left is the printer paper which is floXas and can be loaded just like normal printer paper. As option on the pull down menu allows you to alter the left margin so that you don't have words disappearing down holes in the paper.

DAYFax is simple to use and can be used either as a stand alone organiser or to make up some pages for you out of date floXas. Printing out a year's diary will take some time and the paper is just normal printer paper thickness, which makes it cheap to print or fast. It does have an advantage over the standard floXas in that this one can be easily backed up and you're therefore immune to threats from yuppies kidnapping PCs.

DAY BY DAY
£25.95 ■ All Aurigas and
Sts ■ Digite International,
Black Horse House,
Somersby, Devon EX8 1JL
(0955 270273)



Inside the Day by Day box you won't find any floXas printer paper, which you can interpret as either good or bad. It means a DayFax is needed to print out your memos and appointments for storing in an organiser. Day by Day is designed for you to use on a computer screen. This is it that when you first turn on the Day by Day you would use Day by Day to enter you of what's in, instead of using in your floXas.



■ Unlike DayFax, Day by Day doesn't organise your events as a stand diary with equal slots for each day. It doesn't require planning for a day, that there doesn't appear at all. Day by Day looks like there's a jump ahead. Each week of Friday.



■ Day by Day's main menu screen - either day process or the screen can be used.

As soon as you start, you go straight into the 'largest' section of the program which contains messages like 'Feed the cat for the dog' that you want to see every time you load the program. After you've finished with this section you go into the main program where you're greeted by a menu screen.

Day by Day is more flexible than DayFax in that you can create new categories rather than being stuck with a diary and telephone book. Up to nine categories can be created including 'urgent' calls, birthdays and telephone numbers for example. Clicking on a category takes you to a screen which shows all messages stored there.

The messages can be edited, but this is one area in which the program falls down badly; you can only edit by using the backspace delete key from the end of the message, and so if there's an error at the beginning of a

line you have to delete all the way back to it and the then retype the rest.

Now on the main screen are two sections called 'Overdue' and 'This week'. Overdue shows all the out of date things that you might have forgotten to do like returning library books, paying a bill or getting up in the morning. 'This week' shows all messages that are dated for the current week, a useful thing on Monday morning.

The week and month planners show engagements for the coming week and months respectively. You can also search through all of the categories for a particular word or phrase and any messages with it will be displayed.

In the options section there's duration, range and time. If you switch the duration option on, then whenever you enter a message you'll be asked whether it will take the morning, afternoon or whole day. In some cases you'll want to specify a particular time when something is to happen. The range option can be very useful if you do something on a regular basis, going to the job every Thursday for example. It saves typing in the same appointment repeatedly.

Like DayFax everything can be sent to the printer, but it's only done on normal paper rather than special paper designed for floXas. 'Overdue' and 'This week' are two of the most useful features. You can also just get a print out of certain things rather than having to search through words of paper looking for a particular reference. ■



STANDARD IMAGES

JMC files were created to accommodate IT system file formats, but have not taken off as yet. Some ZIP packages and newer Paint packages produce a flash. Most Word and PowerPoint, then Paint and HyperPaint for example.

MY NAME IS ORG

Anyone who's bought the 'SOFT' Super Pack of 20 games will also have the IT Expertise disk, which is a program by the name of Org. Org is an IT organizer in the same vein as Day by Day, and has the expected features: a diary, a simple word processor, but also a simple spreadsheet.

Although Org is not as simple to use as DayFax its still no problem to work with. Day's text editing facilities are poor and graphics can't be printed either.

DAY BY DAY

for

- Up to nine different categories to enter data
- A month and week plans can be shown you the shape of things to come
- Can search through all categories
- Standing orders - eg weekly meetings - can easily be set up

against

- Poor editing facilities
- Unsuitable for printing out a conventional diary

features

1 2 3 4 5

performance

1 2 3 4 5

ease of use

1 2 3 4 5

recovery

1 2 3 4 5

format value

1 2 3 4 5

BASICALLY SPEAKING

BASIC is still one of the easiest ways to learn how to program your computer. When you haven't got one permanently sitting in your machine there are plenty of people willing to offer you new versions. **GARY BARRETT** syntax checks three recent BASIC additions to the Amiga.

GFA BASIC 3.0

Microdeal £64.95 ■ All Amigas ■ Box 68, 35 Rustell, Cornwall PL25 4YB (0726 880202)

GFA BASIC has been around in various incarnations on the ST for two years now, but this is the first version to make its way onto the Amiga. Over 70,000 copies of it have been sold on the ST which is impressive for games, let alone programming languages.

GFA BASIC comes in an A5 box with a 400 page plus manual and one disk. On the disk are two programs and some demos. One of the programs is the GFA BASIC interpreter and the other is a run only version of the program.

The GFA BASIC editor is split into two sections: the program itself and a menu bar. With the menu bar you can search, search and replace, modify blocks of program, scroll through the program and fix it. Hard copies can also be sent to the printer and you can of course quit out of GFA. The rest of the screen shows your program being.

Tying up after you GFA BASIC, like Amiga BASIC, doesn't use line numbers, but uses labels instead which makes life simpler for the would be programmer who'll find it much easier to remember a word for a line number. Only single state-

COMPILE OR INTERPRET?

BASIC is a high level language, it's designed so that the user of the language can understand the program rather than the computer. What this means is that before the computer can execute your program it has to translate into something that the operating system can understand. There are two methods by which this can be achieved: interpretation and compilation.

Interpretation takes place as the program runs. As each line of the program is executed it is analysed by the computer and translated into code that the operating system can understand. This process takes time however, and therefore interpreted programs run slowly. Also, you can't run an interpreted program without the interpreter present in memory (as far as you get in Japan with an understanding of the language and no one to translate for you). Most computers with built in BASICs use interpretation.

When you compile a program all of the lines in it are translated into machine understandable code. This code can then be run independently of the compiler and you also get a marked increase in the speed at which the code is executed. The disadvantage of compiled code however is the need to compile it before you run it, which can often waste a lot of time - especially if you have a very large program.

The ideal situation is to have an interpreter for testing purposes and then when you're finished the program compile it for the extra speed and convenience of not having to have the interpreter there.

most lines are allowed in GFA, but that helps you to see what's going on. Something else that GFA automatically does is convert all commands to upper case and all variables to lower case. After you type in a `PRINT`, `WRITE` or `DO` command all subsequent lines are indented by two spaces automatically. Most programmers do this anyway so that they see what's going more easily, but the fact that GFA BASIC does it without question is a major bonus. If nothing else, any program written in GFA is going to look neat.

`CONST` in GFA BASIC sets up a procedure which can also pass parameters to the subroutines. This saves time and space since you don't have to assign variables before calling the procedure, it's done instead with a single command like `CONST PUT PUT, 10` instead of having to use `CONST PUT PUT, 10` or `CONST PUT PUT, 10`. Something else which makes GFA friendly is it's on screen compilation procedure: it

makes things clearer. As you have to do a move the cursor to the start of a procedure and press `Shift`, the lines up to the next `Return` which is a full of lines. They can be made to disappear if you want.

GFA BASIC

for

- Program lines' syntax checked as entered
- Hyperbase variables and subroutines
- Loop indentation for clarity
- Procedure listings can be condensed
- Can tell you when a new variable name has been entered

against

- No compiler at present
- Poor quality demos



PROGRAMMING

RUN ONLY

Since there is at the moment no compiler for GFA BASIC a might seem that you couldn't produce anything for anyone but yourself. This is not exactly true though. You can of the run only version.

If you want a utility program or a game and someone else wanted to use it you'd be stuck unless you wanted to give away copies of GFA BASIC to people, and you'd be breaking copyright if you did that. To avoid this problem you're going to have to use the run only version which can be given away freely with any program you write.

There's no improvement of speed with the run only version, because the code is still interpreted, but at least you give the program to anyone that needs it without being used for breach of copyright. Now the level of software, but it does solve the problem with the compiler writers.

Features

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Performance

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Ease of use

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Manuals

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Format value

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



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A GFA BASIC procedure, now you see it...



...and now you don't

How low can you go?

GFA has some unusual commands that are often just a quicker way to do something. For example, if you want to increment a variable by one there are three ways to do it: `inc v`, `inc v, 1` and `inc v, 1`. They're listed in order of increasing speed and although speed may seem unimportant in a business application, it could make that vital difference in a game. GFA has many other commands like this which allow for speed increases as well as commands to move better objects around easily - a task likely to make the game's programmer's life a lot easier.

One final thing that deserves mention is the 'New Names' option. When after you will be informed if you enter a new variable name. This is likely to help in trapping typing errors. How often have you mistyped a variable name and spent hours looking at a machine, trying to work out what's wrong only to discover you've typed `inc` instead of `incv`?

GFA BASIC is a language for everyone; beginners should have few problems with it thanks to the manual

and advanced programmers can do some spectacular things by using the low-level instructions and delving into the operating system. Unfortunately, the lack of compiler does limit it to programs for your own use or for a handful of friends. This renders commercial applications an impossibility until Microsoft release the compiler.

HISOFT BASIC
Hisoft £79.95 ■ All Anigals
■ The Old School,
Greenfield, Bedford MK45
50E (0525 718181)

One advantage that Hisoft BASIC has over GFA is the fact that it can compile standard Anigal BASIC programs too. This means that if you've spent six months writing something in Anigal BASIC you don't have to start from scratch: just load it into Hisoft BASIC and carry on from there. Rewrites can be done on some parts of your program to exploit the more powerful features that Hisoft BASIC offers.

BASIC DIFFERENCES

If you switch over to GFA BASIC from Anigal BASIC then you'll have to make some changes to your programs. Anigal (ANSI) programs could just be saved as BASIC and then MODDED into GFA BASIC, but the differences between the two would stop them (programs from running). Here are three examples which show differences in the two dialects:

Anigal BASIC
GFA BASIC
PRINT "HELLO"
GOTO 100
END

They're not major differences, but having to search through a long program and make all of the changes can be time consuming. One that could well be spent writing the program.

GFA BASIC
CIRCLE 0.5 PI
PI=3.14
PRINT CIRCLE

Hisoft BASIC comes on two disks and includes a 250 page instruction manual. There are two programs on the disk (the editor and compiler) as well as several demos, including a paint program and a few benchmark programs to test out the new increased speed of your compiler. The editor is controlled via a pull down menu with options to save, load etc. and the program is entered into what's effectively a word processor. Syntax is only checked during the compilation stage and so some time can be wasted when errors are not fully detected. Compilation time is dependent on program size and very large programs take ages.

The manual has been very well laid out with several of the programs on disk being explained at a step by step basis. This makes it ideal for the beginner who doesn't know a Procedure from a For-Next loop whilst still giving enough of an in-depth study to suit the advanced user.

Unlike GFA BASIC you don't get

SPOT THE DIFFERENCE

Both of these programs look identical, the only difference being one quote mark in the first line and one in the last, but as you can see from the output each is very different.

Program 1

FOR i=0 TO 90
PRINT CIRCLE i
NEXT i
PRINT "Done"



Program 2

FOR i=0 TO 90
PRINT CIRCLE i;
NEXT i
PRINT "Done"



HISOFT

for

- Simple to use text editor
- Can compile Anigal BASIC programs
- Some excellent demos
- Step by step explanation of how the example programs work

against

- Compiling between each run of the program slows down development

Features

performance

ease of use

value for money

format value



automatic loop indentation or capitalization of commands. If you want that sort of thing you'll have to do it your self. Procedures are supported in the form of the "CALL" command and parameters can be passed as with GFA-BASIC.

One of the things which can be confusing is quote marks. If you don't close quotes after you've opened them then the compiler becomes confused and thinks that the line follows until the next quote mark or part of the same statement.

AC/BASIC
HO MARKETING £195.00 ■
All Amigas ■ Brooklyn
House, 22 The Green, West
Drayton, Middlesex UB7 7PQ
(0895 444433)

Last on the list is AC/BASIC which is not an interpreter, but just a compiler for Amiga BASIC. Supported on the disk is the compiler and folders corresponding to chapters in the 400 plus page reference manual. Like Hiresoft

BENCHMARKS
 A test to see just how fast the three BASICS are three simple benchmark tests were conducted. Amiga BASIC was included for comparison.
 The first test was to duplicate a 400 file from ram-disk to ram-disk, second was a test to print the numbers 1 to 9999 and see how fast writing was handled and as the final test (P400) floating point calculations were done.

Program	Duplicate	Scroll	Calculate
GFA-BASIC	160 s	189 s	15 s
HSOFT BASIC	234 s	285 s	9 s
AMIGA BASIC	177 s	976 s	89 s
AC-BASIC	159 s	1002 s	13 s



■ AC/BASIC and Amiga BASIC shouldn't really be treated as separate entities. You can't use AC/BASIC without the selling features of Amiga BASIC, and the latter can't produce stand alone code.

BASIC the manual explains what each of the example programs on the disk does and this helps the beginner to get to grips with it.

As far as the menu screen goes you have three options: OPEN, PRINT and QUIT. Open asks you for a filename which should be the program that you need to compile from AC-Basic.

That's all there is to it really. All program writing and testing is done in the normal BASIC style.

Obviously AC/BASIC is compatible with Amiga BASIC there'd be no point otherwise and it produces completely fast code. The main problem with it apart from the price is the lack of editor and general unfriendliness of the system. ■



■ AC/BASIC, the Hiresoft program running

Features
☐ ☐ ☐ ☐ ☐

performance
☐ ☐ ☐ ☐ ☐

ease of use
☐ ☐ ☐ ☐ ☐

accuracy
☐ ☐ ☐ ☐ ☐

format value
☐ ☐ ☐ ☐ ☐

AC/BASIC for

- Amiga (Basic) compatible
- Produces very fast code

against

- Have to remember the filename of the program that you want to compile and can't get a directory
- Expensive for what it is

JUDGMENT TIME

Deciding which of the three BASICS comes out on top is no easy decision. Each of them has something in its favour and also something wrong with it. AC/BASIC is fast and compatible with Amiga BASIC, but the high cost and general unfriendliness don't help matters. Hiresoft BASIC is also compatible with Amiga BASIC and has a very good editor, but the lack of interpreter is a definite disadvantage. GFA BASIC is very good at producing code that can be easily understood and looks great on screen, but it's incompatible with Amiga BASIC which many people will consider a major problem, especially if they already have BASIC of program written in Amiga BASIC. The lack of compiler is problem too and so until that arrives you're limited to run only versions.

If you want structured code and don't mind rewriting your Amiga BASIC programs then go for GFA BASIC. Otherwise, for editing, speed in your Amiga BASIC programs, Hiresoft BASIC is an excellent choice.





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Midistudio £99.99

Midistudio is a 30 track MIDI Music Studio. This MIDI software package is a relatively priced introduction to MIDI music processing and includes the following features:

- 20 tracks each assignable one of 16 MIDI channels, each track can be triggered up to 255 notes.
- The main screen features: full tape deck controls with individual volume sliders for each track, note editing facilities including editing of pitch, volume, duration and velocity, plus full scale controller editing/patch load, and effect, etc.

Full control over phrases is offered through Quantising, transposing, and phrase arrangement software pages. The arrangement facilities allow moving and copying phrases on any of the 16 tracks.

The package is easy to use and is a strong competitor with Pro 24.

"Out performs Pro-24 v2.1 in almost every way"
Atari ST User Jan 89

Add With Care £12.99

EDUCATIONAL SOFTWARE

Spell With Care £12.99

Add with Care is a fully mouse controlled educational game with full colour screens and sound for teaching addition, subtraction, multiplication and division to children. This program has valuable difficulty levels and a 10 score table.



Spell with Care is a game which teaches spelling, keyboard skills and motor coordination. Pictures of objects move smoothly across the screen and the user should spell the name of the object, which then checks for letter values. Spelling rules incorporate letter value of words, words and a 10 score table. Words data disks £1.99

Quick List Plus is a utility that

explains a directory of your disks, lists on disk or tape, reads any drive, including hard drive. Prints output to hard copy of databases.

Masterlist is a formatter that optimises disk space, allows you to master and back format for fast format.

Postrip is a utility that captures all or part of a picture file for use in other programs, supports GFA, FAST, HSEFT and ST format and is Degas, ScanDraw and AB Animator compatible.

TRILOGY £12.99



AB Animator £14.95

AB Animator is a utility for creating and animating graphics. It supports GFA, HSEFT and FAST format and is compatible with Degas and ScanDraw picture files. Use the full screen control to animate up to 25 fig frames of 30 pixels wide by 33 pixels high.



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BEDTOME

The Amiga's a wonderous but complex beastie, as you'll find out if you try programming it. BEN TAYLOR surveys the latest clutch of techie books from prolific publisher Abacus.

WHERE FROM?

Abacus books should be available in good bookshops - or they can order one for you if you quote the ISBN (International Standard Book Number). For direct orders, try: Precision Software (01-530 7104) or Computer Materials Ltd (0263 758 8000).

SAVE TYPING!

The best thing about Abacus books is the example listings they provide as you go along. These range from 4 to 4,000 lines (no exaggeration), so it's lucky you can buy companion disks to each book. £14.95 - £5.99 postage keeps you all over book's examples on disk - they really tend to come fly in the UK, so you may have to apply to Abacus direct in the USA.



AMIGADOS INSIDE & OUT

£16.95 ■ 372pp ■ ISBN 1-55755-041-7

Learning AmigaDOS means learning the commands to be typed at the CLI (Command Line Interpreter) prompt. AmigaDOS Inside & Out starts gently with how to backup disks and save files. After that the expertise level ramps up rapidly - you get a clearly-blue detailed description of every command from "addbuffer" to "why" in a rather terse page.

The mechanics of the Startup sequence file that enables you to cus-

tomise your Amiga's booting process is explained, and the good news is that new Workbench 1.3 commands are included.

For programmers, there's a brief appendix on how to access command line parameters from C or Assembly, but there's no real information on bits and bytes behind the scenes.

The authors are Gershon, and in typically British style there isn't much attempt to lighten things with humour - it's a bit stiff for the sheer late beginner with no computer experience. In saying, this book should become the authority on AmigaDOS.

It's comprehensive, accurate, most up to date and cheaper than the standard Norton AmigaDOS Manual.

AMIGADOS QUICK REFERENCE

£13.95 ■ 114pp ■ ISBN 1-55755-040-2

The title says it all really. If you've learned the CLI well enough that you don't need to be led through every new command step by step, this is the book for you. Every CLI command is listed alphabetically with a syntax for use, but not many friendly examples. Appendixes list the ASCII table and some installation error numbers (translating to anybody used machine code programming).

Inclusive of the Workbench 1.3 commands, this is a good but not superb quick-reference page.

AMIGA C FOR BEGINNERS

£16.95 ■ 370pp ■ ISBN 1-55755-040-X

If you read Amiga magazines regularly, you'll have the impression that anybody who's anybody is a C.

The 'beginners' in the title refers to newcomers to C, not to the language. This is a C tutorial, not a guide to be Amiga for seasoned C programmers. If you're using Lattice or Aztec C, you're led through the Amiga commands for running programs. Going file by file with CD and how to correct common syntax errors are covered.

You get a rapid run through of all the C programming constructs, both printing 'Hello World' to user-defined data types at most 300 pages. This is quite light, and if you don't have a cushioning of prior programming experience you may get lost. 30 pages of the end introduce System programming with a few examples of how to do Amiga-specific file saving windows and accessing them.

There are better beginner's instructions available for the C language itself, but the pages on Amiga-specific programming make this book an unreservedly useful for serious students of Amiga C.

ASSEMBLER PROGRAMMERS ONLY!

AMIGA DISK DRIVES INSIDE & OUT

£27.95 ■ 344pp ■ ISBN 1-55755-042-0

How can you write a 300 page book on disk drives? I mean, you just put disks in and take 'em out again, don't you?

Well, not quite. The AmigaDOS CLI disk save mode like `SAVEFILES` and `CD` are quickly discussed at, after which this book is aimed directly at the programmer who wants to know the complete nitty-gritty details of the disk operating system - files, tracks, sectors and all.

Long listings illustrate the superbly detailed information. Examples include reading disk directories within AmigaDOS programs, and at the end of the book is a massive 4,000 line assembler listing 'Desktop' which seems to copy any file-level changes on drives and reflects them by a rapid-`SV` routine and the `Save` block drive, you'll be interested to know, is elegantly programmed, includes some drive

AMIGA SYSTEM PROGRAMMER'S GUIDE

£23.95 ■ 428pp ■ ISBN 1-55755-034-4

The official Amiga ROM Kernel manual ran to 5 volumes of usual type. Apart from being unimpeachable, the total cost is over £200 - so much for a casual read.

Amiga System Programmer's Guide attempts to give you the most important facts for a few (long) paragraphs less. It contains descriptive facts, all then examples of programming the graphics 'coprocessor' and other chips. During multithreading programs using the 'Task' libraries takes about 100 pages, with some handy tips like making programs non-prior that you can't modify, a description of data formats and 89 lines more up.

With a good index, this is an excellent introduction to system hacking, and may let you share off having to buy the expensive official manuals for a long time.

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DOI: 10.1002/for

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35-44	~60%	~10%	~15%	~15%
45-54	~60%	~10%	~15%	~15%
55-64	~60%	~10%	~15%	~15%
65+	~60%	~10%	~15%	~15%

MINIX

Who says you need a mini or mainframe to run Unix? It's now possible to execute a look alike of this monster OS on a 520ST — even on the single sided variety. RICHARD MONTEIRO ploughs through its nine disks.



\$99.44 disks, £10.70 manual ■ All STs, 1MB+ recommended ■ Department 23, Freebice-Hall, 66 Wood Lane End, Hemel Hempstead, Herts, HP2 4EG

Unless you can get your hands on a super computer with a minimum of 5MB of RAM and 60MBs storage, there's little chance of you coming into contact with the Unix operating system. You could wait for Atari's 680 Unix machine or even Commodore's Unix plug-in board. Don't hold your breath though as these machines are going to take their time coming and won't be cheap when they arrive. There is another alternative: Minix. If you want to find out what Unix is all about from the safety of your ST then Freebice-Hall's offering might be what you're looking for.

Like Unix, Minix has a hierarchical file support, full multitasking and a command line interpreter. The Minix system calls are identical to those of the V7. Furthermore, Minix comes with over 60 utilities and 300 library procedures all very similar to programs found in Unix. In short, you could easily believe that you were working under Unix.

Inside and out

Internally Minix and Unix are very different. Minix doesn't contain a single line of the original AT&T source — so claim the authors. But apart from that there is little to distinguish the two.

Minix, its source, utilities and other bits and pieces take up nine disks. Yes, you read right! If your machine only has a single sided disk

then the boot process is laborious as these disks must be shuffled before a prompt appears. Most disk users are laughing as the whole lot can be transferred across.

In true Unix fashion you are asked to log in and then enter a password. After that a hash prompt appears. The usual Unix dollar prompt isn't used, presumably for copyright reasons. From the hash you can do most (useless) things naming looks, compiling source, C programming, file access, you have used this before — and know its CUI instructions, back-wards — you won't be able to do much. The manual is rubbish. It doesn't even list the commands present. Oh, there's a partial list on the back cover, but you won't guess any clue as to what `cc`, `cp`, `dd`, `df`, `ls`, `pwd`, `rm`, `stat`, `cd`, `etc`, etc do. The manual simply provides you with information on booting the system, or

compiling the Minix source, differences with Minix ST and Minix PC and bootstrapping.

Shake it

What about the system calls, the Kernighan and Ritchie compatible C compiler, the full screen editor the many utilities and library procedures that all form part of Minix? What are you supposed to do with them if there's no documentation? Buy a decent book on Unix of course!

If you shy away from command line interpreters and programming languages, then Minix certainly isn't for you. Professors, students and others interested in equity obtaining and studying the source code of a Unix-like OS will be in heaven. Particularly those that enjoy hacking at home on a reasonably priced machine like the ST. Just make sure you have lots of literature on Unix before you get Minix. ■

WOT EUNUCHS?

Unix is tested more and more as the operating system of the 90s. It's a huge OS requiring a minimum of 5MBs to install and around 60MBs storage for its various system files. Unix is often found running on embedded things and mobile units as it offers multi-tasking and can support many users. The system uses a command line interpreter similar to the shells — it's also described as an open-systems kernel and operating system by those worried on SMP systems.



IN THE BEGINNING

When AT&T first licensed Unix outside Bell Laboratories, it was quickly picked up by universities (not to mention industry). It wasn't long before a Professor at an Australian university wrote a book which provided comments for the OS's source code. The book plus the readily available Unix source made it possible for students to get hands-on experience working with, and modifying, a real operating system.

AT&T pulled the plug on education when Unix V7 was released a year later, which remains in force today, was issued prohibiting the use of its source code in classrooms.

That's the reason for Minix — an OS that is system call compatible with Unix and which doesn't have any licensing restrictions. There's also the advantage that Minix works on 520ST machines and comes complete with command-line source code.

for

- Ideal for students and only users interested in a Unix clone
- Compared to Unix, it is very cheap
- Runs even on a single sided 525

against

- Limited audience
- Compiling such things as shells on 525 ST machines
- Knowledge of Unix required; manual doesn't even list utilities provided

Features

1 2 3 4 5

performance

1 2 3 4 5

ease of use

1 2 3 4 5

reusability

1 2 3 4 5

format value

1 2 3 4 5



SUPERBASE PERSONAL 2

When Precision released *Superbase Personal* they claimed they had found the ultimate design in user-friendly environments. Now *Superbase 2* looks set to provide an even better system. MARK HIGHAM finds out what it's all about.

£59.95 (Upgrade: £49.95)

■ ST & Arneig ■ Precision Software, 6 Park Terrace, Surrey, KT4 7JZ (01-330 7166)

PICTURE TRICKS

Superbase allows you to save pictures (as part of your text) so that you could set up a library of digitised or drawn pictures and recall them with certain forms. This can often be extremely useful. The new *Superbase* version applies these same features to all record files affecting most logging possibilities. Unfortunately this feature is not available on the ST.

Superbase 2, Precision's new windows package, offers a window-orientated relational database. A whole host of drop-down menus and simple field creation methods make setting up the database reasonably easy. With extensive hints (included in the manual) you can soon find yourself exploring the different commands which can be used to check that the data entered by a user conforms to some kind of standard. This is where the fun begins because a window-orientated database can eventually be so user-friendly that even your granny wouldn't object to sitting at the front of the keyboard.

To create the system you name the fields and then specify their different types, ie, text or numeric and their lengths. Once you've done this, the next step is to enter your data. This is usually the time-consuming element but the new version comes with batch menu options to reduce the time you'll spend getting a backache posed over your keyboard. Being a relational database, you can



■ The *Superbase* environment is based on a window-type operation with icons along the bottom letting you move through the database, there, therefore, the different files being set up

recall data from other files.

The benefits of relational databases are enormous when large amounts of data are being manipulated. They let you to call on fields from one file whilst working on another. This saves disk space by storing each field only once. For instance, you could save cost figures from one file and then import them into another using the same data in a different application.

Superbase offers brilliant data validation techniques which don't allow the eventual user to enter any information outside of specified boundaries. The new version extends this feature by letting you include help messages which can be displayed in the event that entered data does not conform to a specified pattern.

So how does this affect an armchair user?

For example, you could arrange a field so that you would be able to enter the number of minutes that a typical armchair could survive outside the Farnham offices. Since no armchair could survive any longer than a quarter of an hour, if the user entered a value greater than fifteen minutes from *Superbase 2* could display a message saying that the armchair was already in ruins.

The whole purpose of a database is to save information and recall it again, either as some kind of extensive address list or, more often, performing some kind of operation on numerical data. A query option is probably one of the most impressive features of a database. It allows you

to search through a file and see if another file any of those entries which correspond to a required format. This file can then be treated as a separate entity and printed or viewed.

What if you want?

Superbase is a powerful and well designed tool offering extensive database management. Such abilities usually go hand-in-hand with complexity but it's a relatively simple database as they go. The validation routines might seem complex at first but, as is true for much of the *Superbase* environment, you can quickly learn what you're supposed to be doing. One of the best features of this new version is its extensive error detection which allows you to define error rules to be displayed during use. ■

SUPER SUPPLEMENTS

In the months which have passed since the release of *Superbase 1*, Precision have made numerous improvements. These include:

- Validation is provided across multiple files as well as more extensive validation options including user-defined help messages.
- Batch file options to speed up the entry of data.
- Ability to search for external text files.
- Mail-merging facilities.

In addition to new features including the *SPRINT* (fast) field, automatic record numbering, multiple fields, inclusion of constants and mail-merge files to reduce the chances of accidentally erasing data.

■ Compatibility with *Superbase 1*.

Features

1 2 3 4 5
performance

1 2 3 4 5
ease of use

1 2 3 4 5
reusability

1 2 3 4 5
format value

1 2 3 4 5
format value

for

- Excellent tutorial sessions
- Easy to use for the beginner
- Extensive data validation options
- Can include graphics in data

against

- Some *Superbase 1* data files can't be read
- Validation command lines could be wider



The problem with WPing

First Word Plus is not exactly the most well designed word processor.



1ST WORD PLUS

The Standard 512 Word Processor

Like everything in life, it has its faults and foibles. For a start,

DESKTOP

Computers are an overpowering bunch, difficult to master even at the best of times. Dawdle down to Desktop to learn how to tame the Atari beast. This month's winner is Neil Edney from Kent. His strident attempts will be rewarded with £30 – just as soon as our ST hands back the cash.

First user I/Os are known to cause your ST to completely scramble a disk during saving. This can be great fun if you're into safe masochism, but it's not good news for anyone used to dealing with large files. If you try to save a 10K file onto a disk with only 40K free space, even a 640K disk, the first 40K will be saved and the remainder will flout off to that happy hunting ground in the sky. This would be miserable if the original had you of its intentions.

Another common difficulty which seems to occur, again when dealing with large files, is the

crashed broken software fault. First Word Plus will suddenly slide in semi-consciousness and start reacting painfully slowly to every action. Menu bars will drop down at ridiculous speeds, and key responses are almost nonexistent. The first time it happens you think your ST has died off – not an encouraging thought after spending hours typing The Life and Times of Arthur the Armadillo into your wordprocessor. The only way to remedy this is to save the document, switch off and start again.

N Pearson

Swansea, West Glamorgan

Packaging Patch

The packaging program used on the ST side of the cover disk can be persuaded to write the unpacked program away to disk to making use of a simple patch. Obviously this means that the file will be larger, but it has the advantage that you don't get the usual stutter on the screen whenever you load. All you need do is change a single byte which can be done using Typedit given away on cover disk 2.

Copy the file you wish unpacked from the cover disk to another disk. Select Typedit.

DISK FORMATS

For several months now people have been bringing out increasingly complicated and unusual disk formats which are supposed to stretch the capabilities of your disk to the limit. These might not be particularly beneficial for owners of double-sided drives, but if your disks can only be formatted on one side they're a mind-boggling achievement.

An ordinary disk can be arranged to accommodate nine sectors per track. It's simple enough to modify this so that fewer sectors can be used. When pushed, the disk can handle up to 11 sectors. A good-quality drive should be able to use up to 80 tracks giving a dramatic rise in the available space. The drive works by starting at the edge and moving inwards; if it can cope with the additional number of tracks then the drive will start to make all kinds of unhealthy noises. This is not uncommon where many drives on the market are only designed to accommodate a maximum of 52 tracks per disk.

Another way of squeezing extra data onto a disk is to subdivide the last sector. Formatting this means you can't use the disk for booting, but you can still store and recall your files without any trouble. The directory on a disk can handle a maximum of 112 files, but this borders on the ridiculous. Seven sectors are set aside for this purpose, but there's no problem reducing this to just four sectors (64 files entered).

Some format programs provide fast disk reading. This works by formatting disks non-sequentially, instead of placing entries in the order 1, 2, 3, 4, 5, 6, 7, 8, 9 then format programs change the order to 1, 9, 2, 8, 1, 7, 4, 6, 5. The advantage being that when a drive has finished reading sector 1, the drive head is forced up to read sector 9. On a standard format disk, sector 2 comes directly after 1. Unfortunately sector 2 appears too quickly for the drive head to read any information contained there – consequently the disk has to make a

complete revolution to give the head enough time to pick anything up.

Another speed-saving feature is sacrificing the first sector on a disk by writing an error to it. This is useful because your ST will check the validity of the first sector, find that it cannot be used and move onto the second sector where it can immediately begin to read data instead of waiting for another turn of the drive.

OKAY, SO WHAT HAPPENS AFTER OPENING 40 FOLDERS?

The ST is an intelligent machine, but it can hardly be blamed for making mistakes when some smart-alek has ordered a problem into the system. The ST has an inherent disease that causes it to crash if it looks into more than 40 folders in one session.

To save it accessing the disk drive again and again, the ST will read the directory and store the contents of each new folder in its memory. When you close a folder this information should be cleared, but an error in the OS means that the contents of an old directory aren't always cleared. Bits of the data will remain in memory, causing a mess. If you've ever examined the free memory in your machine after a heavy session, you'll notice that it reports very little free space even when there's nothing in memory. Other errors will start to materialise. This problem can be resolved by making a simple reset after any lengthy period of use, or when you've performed any extensive disk copying. Alternatively, avoid using more than 40 folders.



Using the file editor, choose your program and then enter `0000-RETURN`. Typewill now display the contents of the file at its offset. Click on the '0' byte shown immediately after the address on the top line. Enter '01' and press RETURN. Click on write, read and then close the window. The patch has now been made.

When the program is run it will put up the usual 'locked by' message and the screen will then flash in the normal way. However, instead of running the program it will ask if you really want to load the program. Click on 'Y' and then type in a file name. The test, unpacked program will be saved onto disk. Don't try this with

already unpacked programs, though, since this will probably corrupt them.

A Murphy Lightwater, Surrey

Showing text files

You don't necessarily have to load up a word processing program to view a text file. Assuming the file is pure ASCII, you can quite easily double click on the file as if it were a program. As just text will appear containing options for editing, sending the document to printer or displaying the document on screen. Click on the appropriate box for sending the file to

screen. Pressing the space bar causes the information to scroll upwards a screenful at a time. Pressing RETURN forces the file to be scrolled just one line at a time. You can abort by hitting 'Q' or 'Control-C'.

N Richards, West Sussex

Mouse movement

When you're sat at your keyboard waiting for a program to load, and you find that you're nothing better to do with your hands than jiggle the mouse backwards and forwards, then stop this can often cause all manner of problems dur-

ing loading. Information on mouse movement is sent to the computer all the time, which explains why you can move the mouse pointer round the screen at any instance. Effectively the processor has to wait in time between looking after the pointer and something else like loading data. The result is that both tasks slow down. So keep that mouse still!

**C Year
Hawke, North Humberdale**



POINTING THE WAY FORWARD

Printing text in various styles from something like GFA BASIC is no problem. But have you ever tried doing anything remotely clever from ST BASIC? Trying to get headlines snatched across your screen in more styles and point sizes than an armadillo after a jog across a razor blade is tough. However, by making the most of a few poles the whole appearance of your screen can be altered.

Text size changes can be made with the following poles. The variable is refers to the number of vertical and horizontal pixels that make up a character. The normal number is six. However, in high-resolution mode, standard size text can be accomplished using 12 pixels.

```
10 POKE CONTROL, 12
20 POKE CONTROL+1, 1
30 POKE CONTROL+2, 0
40 POKE PITCH, 0
50 POKE PITCH+2, 0
60 WAIT 10
```

Text styles can be adjusted using these commands, where *x* is the style number in the range 0 to 31. Combinations of different styles can be achieved by adding values together.

```
10 POKE CONTROL, 004
20 POKE CONTROL+3, 0
30 POKE CONTROL+4, 1
40 POKE PITCH, x
50 WAIT 10
```

Following are the effects possible when the value *x* is changed:

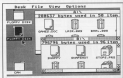
0-normal	8-bold
2-light	30-thick
4-italic	8-underline
16-outline	



AND NOW FOR SOMETHING COMPLETELY DIFFERENT

After a while the Desktop front screen can begin to look about as appealing as a strangled ham. By making changes to the DESKTOP.BIN file you can cause radical alterations to the appearance of your screen. It might not be entirely useful, but it's great fun.

Remember the TRASH can is a fairly easy thing to do, by



loading up a text editor - such as First Word - and replacing the TRASH label with another of your choice, you can immediately make an improvement. Other alterations can be far more impressive.

Examining the DESKTOP.BIN file you will see these two lines:

```
00 00 00 00 FF 0 STAFFS DESK 0
00 00 00000 FF 0 STAFFS DESK 0
```

■ This is the position of the icon on screen. ■ This is the icon graphic: 00-disk icon, 01-folder, 02-trash, 03-program, 04-data

Changing these values will cause different icons to appear on the screen. Below these two lines you'll find a further six lines which contain information relating to the display of the different icons. Changing this data can cause a program file to appear as a trash can, a disk icon or even a folder icon.

```
00 00 00 00 00 00
00 00 04 00 00 00
00 00 00 00 00 00
00 00 00 00 00 00
00 00 04 00 00 00
00 00 04 00 00 00
```

Once you've finished changing the appearance of your screen, you can save the edits to disk. Reloading will bring up your customized desktop.

**Neil Ridgway
Kent**

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FORMAT LETTERS

Getting your back up

I recently bought your December 1989 issue of *ST Amiga Format* and thought, "Geez, another disk full of great programs." I was particularly interested in the Format 11 high capacity disk formatter. I was always sick of my disks running out of space just when I needed them, so I used it to re-format all my disks. I copied the programs onto one disk, formatted another then copied them back. I was so pleased at the entire room. I did not use any programs on those disks until yesterday. I tried to run *8800C* and found it would not work. Then I examined my programs. As it turns out, something has re-arranged them all and pored them together. I used to think your magazine was great,

"I want to complain!" "You're the best!" "How can you say that!" "Of course it is!" "You're a consistent lot, that's why we like hearing from you so much. Stake your claim to a lavish imitation plastic Format Organiser prize by writing to Format Letters, ST Amiga Format, 4 Queen Street, Bath BA1 1EJ."

but now I am not so sure. I had three quarters of a computer project for my GCSE, *Computer Studies*, on those disks. It is all lost thanks to one program. Now I have a *perfect* *8800C* program and a computer project that is now changed with a program which plays music.

David Stevens
Bath

■ Some disk drives will have difficulties meeting the demands that Format 11 makes to gain the extra space, and it looks as though you've been unlucky. Sorry for the problems you've had but you've learned one lesson the hard way - always keep back-up copies of anything important.

Black trouble

I have a small question on your *Mass Emulator* program printed in issue 2. I have the new FDS 1.08 system and although the *Mass Emulators*, which was printed in issue 1, runs perfectly, your program in issue 2 called *Chameleon*, which is also on there, and your program in issue 2 called *MCT*, a high resolution print program, do not.

Jeffrey Tyler
Ebbw Vale

■ Unfortunately *Diamond* and *Wolfram* just don't work under issue 2's *mass emulator*, despite a suggestion to the contrary in the disc pages.

Getting into business

I am interested in selling up my own business. However, I lack certain knowledge concerning the lots of some computer software warehouses.

I have been developing some software for my 386 computer which I think I could sell commercially, but I need some extra income through selling commercial software from software houses/independents etc. Can you put me on the straight and narrow path? Is it a good idea to sell software for extra income?

Nigel Stalcom
London

■ You best bet for contacts is to try to subscribe to a magazine called *Computer Trade Weekly*, which carries adverts for distributors and lots of software houses. Ring 0428 211026 for details.

Legal eagle



I would like to give your readers a warning about returning faulty software. I purchased a game from a computer store which turned out to be faulty. When I returned the game, to the shop they exchanged it after looking to make sure

that it was faulty. When I tried the new game the new was faulty as well, as they had no more in stock I assumed I would receive a full cash refund to purchase the game elsewhere but no, I was then informed that because of copyright law regarding computer software, they could not give cash refunds on faulty goods they would change the game for another of the same price, but there was nothing worth buying. When I said that other stores give refunds for faulty software I was told that if I wanted to buy software from other stores then I was welcome to do so, then I asked my customers were not told this when purchased software I was told, "If you ask us we will tell you". I think this to be unreasonable if there is a copyright law regarding refunds on software, stores should have a notice informing customers of this and not wait until goods are returned to be informed, then at least customers can see for themselves which store offer good after sales service and don't use a copyright law which I think does not apply to faulty software to hide behind to avoid giving refunds. As for the game, I had to wait a few days until new stock arrived in the shop.

R.M. Goldstone
London

■ Stand up for your rights! Please, we've got it made before for saving an unformalised opinion on consumer law, but as the fearless champions of truth, justice, liberty and (usually) candy bars, here goes again.

If you are sold a product which doesn't work right from the start, you are entitled by law to either a replacement or a cash refund - you choose which, not the shop, and you are entitled to a proper refund rather than a credit note for later use in the same shop.

If you buy a product which works at first but goes wrong later on, within the guarantee period, the shop can offer you replacement, repair or refund at their discretion. You can't argue with their choice.

If you buy a product which you later decide you don't want, that's tough. The shop may take it back and give you a credit note if they feel nice, but that's up to them.

When it comes to software, just like music tapes and records, shops are frightened of people buying one, taking it home and copying it, then bringing it back to say it is 'faulty' for a refund. That's the copyright angle that your shop quoted to you, and if they have any choice in the matter dealers won't usually swap one game for another for that reason (although in your case you were offered precisely this solution). However, this doesn't affect your statutory right to a cash refund on demonstrably faulty goods, and from your description you were entitled to one. Next time just stand in the shop and talk loudly about your good friend the local trading standards officer...



To be formal, listing your own software is dangerous – there's more to cast a critical eye over it and suggest improvements. You'd be better advised to offer it to a recognised publisher to deal with, and take royalties as an author.

As for selling software, many mail order houses make a good lump out of it as you can see from the adverts. However, you'll need a healthy business plan to give you enough cash to buy your initial stock.

Good luck!

'Ello, 'ello, 'ello

I have a few questions that I would like to ask you, and so I'm not a policeman but one of your devoted readers.

1. Why is it that most of your readers put numbers in front of their questions?
2. In issue 7, one of your readers wanted to know what is the price for back issues. Your answer to his question was not very helpful, well not helpful to me anyway. What is the price?
3. On the subject of Emulators, at work I use the Macintosh II which I find leaves all the others standing. It works at such a speed. Hold onto your hats – it's a Turbo IIx5. The Atari ST has a Mac Emulator and does it very well. Now, is there an Emulator available for the Amiga 500 to Emulate the Super Macintosh II? If not, then ought to be!

Your magazine is great. You're up to date with the latest and the cover disk is a bonus for us Amiga owners who had to get a magazine to buy their computer. Oh well... I don't have an Amiga yet, but I hope to be in the possession of one before the end of January, or my name is not Starbuck!

Anderson Sweeney
London

- 1. Get on with the questions.
2. Back issues are cover price plus 75p post and packing, in £12.50 for issues 1, 2 and 3, and £10.00 for the rest.
3. There is a rumoured Amiga Mac emulator under development, MAME from ReadySoft, the company responsible for Dragon's Lair. It looks to be a good six months away yet, and you'll probably need 1MB of memory to do anything useful, so an A500 won't be much good.

HiService

I bought a copy of HiSoft's Power (HSC) at a top computer show. It was quite cheap, about £18. I



Seeing your review of STOR in issue 4, I immediately wanted to get it. I was about to order when I glanced at a review of the Creator in another mag (are there any others?) – D&D. My heart sank when I discovered that you

needed to include a message telling the public the origin of the created game. This would put people off buying your game, and I feel it was a serious omission to state in your review. How for some questions:

1. Can you load 'Neocolor' pictures back into the ST?
2. Can you tap into to clean the ball inside the mouse?
3. What is a TOS #35 error?
4. Will the new TOS (version 2.0) coming soon from Atari be compatible with the games I have now?
5. What use is a disk organiser? Is it like a file? How about having a disk index as the better price at some point – they're only useful.

Hackers – if you want to take a peek at a game's contents, insert a blank disk to start the ST with then insert a game disk, double-click on it to open it and all shall be revealed. If you want to try to run a GAT file, click on the icon and drag it a bit. Having it in the same window to copy it. Click on OK when asked if you want to make a copy, but when the screen with the two names comes up, press (Backspace) to wipe off the word GAT, then type in PIG at the end of the file name. Remove disk and insert blank disk. Click on OK when the blank disk is in. The copied file should have a different icon and be runnable. It usually crashes without

didn't have a look in the manual until some days ago when I found out that several appendices were missing. I phoned HiSoft about this problem and they told me that they would send me the missing appendices and the second version of the program as well without any cost. This kind of service pricing is just not worth it, especially considering the more serious (and expensive) programs. I just wanted to let the people know that HiSoft is great!

Jay Lee
The Netherlands

Hidden secrets

I am a newcomer to the Amiga (500), and while looking around my local newspaper to find a magazine which would supply much of the detail computer manuals tend to omit, I came across this magazine. However, I am having a problem in making a backup copy of your disk.

By following your instructions and using the RAM disk, the games and utilities copy onto a new and formatted disk but the documentation that accompanies each program does not, even though the 'DOC' icon appears on

Cracking games

the rest of the data from the game disk, but sometimes a fairly bit of information is revealed.

On HSC Atari's comments in issue 4, people might be advised to admit that they use BASIC, not because real programmers use machine code though, but because BASIC on the Atari ST is so utterly complicated. Why bother with all these menus? It may be faster, so they say, but it sure is a hell of a lot more complicated to work out. Guess good old Amiga's BASIC any day!

Martin Grew
Halesham

- On the version of STOR that we use there was no message saying that STOR had been used to create a game. It is possible that the review you read implied that you really ought to admit to it to keep your conscience clear. Mind you, any software house taking credit will be able to tell anyway.
- 1 – Neochrome pictures are always low resolution (256 by 256 pixels), but almost all art packages (Egads, PagePaint) can do, and still save in this format.
- 2 – If your mouse gets grubby dirty, the best thing is to remove the ball and clean it with some methyls. Also clean the cylindrical rollers inside the mouse, where the ball makes contact, with some methyls on a cotton bud.
- 3 – TOS #35 error means the file you tried to run isn't a correct program and the ST can't load it.
- 4 – Should be, but you never can tell until you use it.
- 5 – You aren't allowed to say 'Ho! Ho! Ho, O' and so you get sued, but you've got the general idea. And just for you, we'll send a disk with rather than an organiser.

the copy. That is, when the documentation is selected, either from the disk menu or directly from the Workbench, an error 35 is returned.

A similar problem seems to exist with the Sortable software installed with the computer in that everything appears to copy and work onto a backup disk except the Spell Check program. The program works correctly from the master disk but when selected from the copy, Dictionary not found is returned.

D. Holliday
Nantogs

- There is a problem copying files on the Amiga since not every file has an icon which shows on the Workbench screen. What is happening is that there are important files on our cover disk which don't have icons and simply can't be copied by dragging icons. Specifically, in order to display the .DOC files a program called WRDR is on the disk, but you can't use it or copy it from the Workbench.

How only recourse is to use the CLI to copy the disk:
→ open up a CLI window by clicking on the CLI icon in your start-up disk's System drawer.

- Format a fresh disk called, say, MNDISK.
- Look at the name of the the cover disk to be copied, as shown below (so don't say it is CHANGESPL).
- Type COPY CHANGESPL TO MNDISK:ALL

If you only have one disk you'll be in for a lot of old tapers, but all the hidden files will be copied.

Ordinary commercial disks like Sortable you should copy by dragging the disk icon onto the top of a blank disk icon, and the will copy every file. However, because the .DJ Format cover disk is a strange format this method doesn't work.

Pinning it down

I recently purchased a £20 STPR (one of the April Summer Pack offers) which I am very happy with. I now own a Star UC9410 24 pin printer and the Timeworks Workbench ST package, which I use for home as well as for my college course work. However, I am having some problems with the setting on the printer and Word Processor. The Star printer manual says that the DP switch

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Amiga 6000		749.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 6000	749.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 6000 Plus		769.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 6000 Plus	769.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 7000		849.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 7000	849.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 7000 Plus		869.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 7000 Plus	869.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 8000		949.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 8000	949.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 8000 Plus		969.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 8000 Plus	969.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 9000		1049.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 9000	1049.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 9000 Plus		1069.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 9000 Plus	1069.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 10000		1149.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 10000	1149.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 10000 Plus		1169.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 10000 Plus	1169.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 11000		1249.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 11000	1249.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 11000 Plus		1269.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 11000 Plus	1269.95	1024	5.25"	640x480	60	2	8	1	1	1
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Amiga 12000 Plus		1369.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 12000 Plus	1369.95	1024	5.25"	640x480	60	2	8	1	1	1
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Amiga 18000 Plus		1969.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 18000 Plus	1969.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 19000		2049.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 19000	2049.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 19000 Plus		2069.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 19000 Plus	2069.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 20000		2149.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 20000	2149.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 20000 Plus		2169.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 20000 Plus	2169.95	1024	5.25"	640x480	60	2	8	1	1	1
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Amiga 26000 Plus		2769.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 26000 Plus	2769.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 27000		2849.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 27000	2849.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 27000 Plus		2869.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 27000 Plus	2869.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 28000		2949.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 28000	2949.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 28000 Plus		2969.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 28000 Plus	2969.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 29000		3049.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 29000	3049.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 29000 Plus		3069.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 29000 Plus	3069.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 30000		3149.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 30000	3149.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 30000 Plus		3169.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 30000 Plus	3169.95	1024	5.25"	640x480	60	2	8	1	1	1
Amiga 31000		3249.95	1024	5.25"	640x480	60	2	8	1	1	Amiga 31000	3249.95	1024	5.25"	640x480	60	2	8	1	1	1
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		GAME				HARLOW	
		COMPUTER		TOTAL		£	
POST CODE						EVEN 9PM	



will cut paper lengths of either 11 or 12 inches, but 84 paper is 11.6 inches long! This may not seem like a lot, but it is enough to mean that printing starts slightly further down the page on each sheet that is printed, which means I have to print each sheet one at a time. On top of all this, the formaters package assumes a page length of 66 lines, which is no help at all. Can you please, please, PLEASE tell me what settings I should be using to get the right printout?

As a frequent user of a Word Processor, I like to be able to store documents in a RAM Disk while I'm working on them, and then save them to floppy disk at the end of the session. It also speeds up printing as Wordstar uses a postscript program. What I want to know is if there is any way to modify the DESKTOP file so that all files with a .DOC or .LIT extension are copied from the floppy disk to the auto-loading RAM disk when I switch on the system.

**Mr S Lawrence
Beverton**

■ Unfortunately most printers and software are geared up for American paper sizes rather than European ones. American "Quattro" paper is 11 inches deep, compared to our slightly longer A4 standard. Most printers provide that at 6 lines per inch, which at 21 inches per sheet gives your figure of 66 lines a page.

Your solution is to change your paper to continuous 12" stationery. This is the most common kind there is, precisely for this reason, and you should have no trouble getting hold of it in any quality you want.

There is no way on the standard ST of copying a group of files to a RAM disk on startup—maybe one of your cleverest contributors of a PO program to do this! However, Amn's ST

Protest provides a command line system for your ST, and by using Protest the program in your AUTO loader can make it copy all the files for you. It does mean changing your word processor though, so how important is it to you?

Double trouble

My problem is but a simple one, so I hope you can help.

I am the proud owner of an Atari 520ST50 and I am considering upgrading to a 1040, but I am worried that some of my vast collection of games will no longer run on it. So quite simply will all 520 software run on a 1040?

**V M Chubb
Worland**

■ Yes, the 1040 will run all 520 software perfectly.

Three's company

I have just placed a subscription for your excellent mag. However, your back issue dept have not put out issue 3. Can you please send me issue 3 if anyone is willing to part with their copy and disk? I will refund the magazine cost and postage.

**Mr Keith Thornton
Carmy Island, Exons SS8 5PZ**

■ There's a free classified ad for you — send me *one*! And the other issues are selling out fast, so get your orders in now for these valuable first editions.

Last word

I think that First Word Plus word processor is in some ways better than a real STP program. In STP graphics are printed in graphics mode and text is printed in printer font. When you only use a typewriter, then this is a better solution than printing everything as a graphics dump takes a long time

Kills on the loose

Granted, it is not often that you make mistakes, but when you do... Read what huge mistake in issue 7 I made on page 83 in the 'Make Your ST Safer' report, just under the virus-load diagram, the three monsters were all listed as 680, 15k, and 33. However in the actual virus-load diagram, the third monster is listed as a 15k, a difference of about 527k/70! How are people expected to build to delete a program if the specs are so inaccurate? We are talking about opening the ST!

OK, so you're in the clear — you have a little legal clause in heavy print. A lot of good that does to someone with a broken ST? We take no responsibility.

The idea, however, is terrific. I certainly wish to continue the operation on my ST, but without using plans that contradict themselves. Could you please tell me which is the right value monster. Please can we have more electronics projects. They enhance your already fantastic magazine.

**Gary Warburton
Dunbar**

■ Oops! The value on the monster was correct. I think we plan to do one major hardware project roughly every three months, so that should keep you smiling.

to print, ribbon gets worn quickly, quality is not very good for EPPs. OK, if you want a laser printer then it's no problem!

Could you please put a program which converts high-high resolution screen to high resolution and vice versa on disk for the ST?

**Jay Lee
The Netherlands**

■ You're hit on the essential problem of EPP packages, that without a laser printer the quality of the text they produce is very poor, compared to the printer's internal fonts. Of course you're restricted in the text sizes you can use in WWP, but for simple applications a 4" will get better results than a 520 package.

Anyone out there care to write on a screen mode converter for the 680? Big background send you — see the disk pages for details.

Not fare

With respect to your response in the January issue, Vol 2 page 98, it would appear you know at least about such as you did about adverts, and box numbers. Well, to enlighten you facts from the vicine, the Hackney Carriage Act states that a fare paying passenger will enter a cab and reduce the driver to take him to an address, providing it is within a six mile area and the fare will be charged according to the meter.

Over that mileage, the fare will be the subject of negotiation between the paying passenger and the driver.

Again, before a taxi driver can get a licence to operate, he must pass a written exam and be conversant with all the roads, streets, etc. in Greater London. The novice

used to learn by riding round the capital on a push bike. I understand they now do it on mopeds, so all tax drivers know where Al Poly is. And if you are so sure you could have got a line can

Please don't try and take the money at other people's expense, it only makes you look stupid.
**Dion B Ashman
Aldford**

■ Our suggestion that London cabbies don't know where Al Poly is was really intended to be a joke! Apologies if the success of this revolutionary literary device hasn't reached Aldford yet!

Case for conversion

I have had an ST for some time now and just recently bought an Amiga.

On the ST I used the Acroscherm art package and have many HDV picture files. I am wondering whether there is a program, preferably PE, that would change the Acroscherm files into Amiga ST picture files.

I still have both computers as a program on either of them will do.

I would also like to know if the Amiga version of the Hal digitizer has been released yet.

**David Janning
Southampton**

■ Many ST art packages can read IFB files (Amiga for word but not many Amiga ones can read ST Acroscherm ones). One commercial Amiga program that will do the conversion is Planete from Precision Software (01-222 71480).

Beetlemania

As a contributor to your wonderful magazine, I feel it necessary to object to a comparison made in the review about the Powerdrive, issue 6, December 1988. You state that "the annoying rumble of an engine, which sounds as if it came from a 1950 Volkswagen Beetle, is a temporary stop the road the track." It is this reference that I find offensive. As a proud owner of a VW Beetle I feel this will be taken as an insult by all VW Beetle owners out there. I therefore appeal to all Beetle owners to boycott ST Amiga Format until this statement is retracted and an apology is made.

**Craig Boley
Southall**

■ Of course no intent to imply that the featured Beetle was of a Beetle standard as though it were a supercar, space station. Unfortunately due to a printing error the words got changed around a bit.

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off
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How the scheme works

• The ST Amiga Format voucher scheme is a special 1989 promotion to encourage you to buy the magazine regularly.

• It offers you savings of up to £17 when you buy goods through the magazine.

• The vouchers are not limited to specific items – you can save on any purchase from one of the participating advertisers.

• Most mail order advertisers in this magazine are taking part in the scheme – just look for this sign.



• Remember. The use of just one voucher could more than recoup the price of the magazine.

THE FIVE SIMPLE RULES

1. Format vouchers can be used to obtain discounts on purchases of goods advertised in the issue of ST Amiga Format, provided that they are bought directly from an advertiser taking part in the scheme. The vouchers are valid only for those advertisements which say "We Accept Format Vouchers".

2. Each voucher entitles you to a discount at the voucher's face value, provided that your special order level is higher than the figure indicated on the back of the voucher.

3. To use a voucher, simply enclose it with your discounted payment when you order. You may use only one voucher in any one order.

4. The order including the voucher must be received by the advertiser before the closing date printed on the voucher.

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The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing. Based around the new Motorola 68000 chip, The Amiga has 1280 Kbytes and a unique modular design gives you built-in 1.44 or optional hard drive for a wide range of storage options. The Amiga 500 has a built-in 16-bit graphics chip, which gives you the most powerful graphics available. Designed with the user in mind, the Amiga 500 offers easy-to-use floppy environment and comes supplied with a free mouse and when you buy your Amiga from Sigma Shop, the UK's first Amiga specialists, you get experienced on-site sales service that is second to none, including a technical support service that is second to none. Sigma Shop is the only UK dealer to offer free four-day delivery service, which will get your Amiga at the Sigma service and the very best Sigma Amiga offers. £299.

The screenshot shows a website with the title 'WITALE'. On the left, there is a large green apple surrounded by various fruits. On the right, there is a bar chart with a blue line graph overlaid on it. The chart has a y-axis labeled 'COSTO' and an x-axis labeled 'CATEGORIA'. The bars represent different categories, and the line graph shows a trend across these categories.

100

[illegible]

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