Price: £1.95

ST APPLICATIONS

The Magazine for Users of Atari ST, STE, Falcon and TT Computers — *Issue No. 32, August 1993*

THIS MONTH

Reviews

Articles

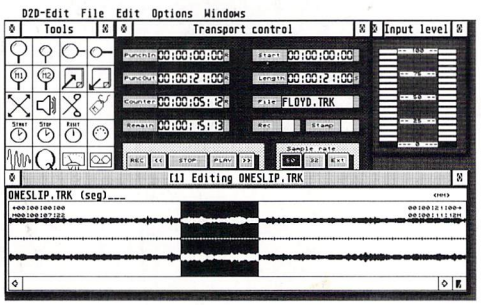
Regulars

Printed in the U.K.

ADDRESS

Originally a shareware product, Tim Finch's *Address* has now been adopted by the ST Club as a modestly priced commercial product. A miniature database optimized to organize the names and addresses of your contacts, it will store them, find them, insert them into your documents or print them on to envelopes or labels. Reviewed by Peter Crush.

D2D SYSTEMS



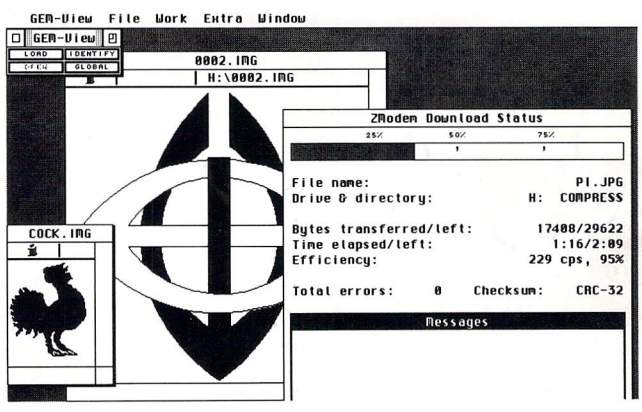
Piper gives an account of a session at the Cobra Studios in South London where he tried out a collection of stereo direct-to-disk recording and editing software from D2D Systems in Cambridge.

STALKER...

...is a communications terminal package with an impressive pedigree, written by the NeoDesk authors Gribnif. Sold in the UK by Compo and given Neal O'Nions' personal seal of approval, it is, according to reviewer Graeme Rutt, something very special.

COLOUR SCANNERS

No longer the sole prerogative of PC owners, full colour scanning has now arrived for the ST in the shape of two new machines from Epson, the GT6500 and the GT8000. With scanning up to 600dpi in full 24-bit colour, the hardware is as good as anything currently on the market, according to our reviewer Keith Quinn.



The Writings on the Wall

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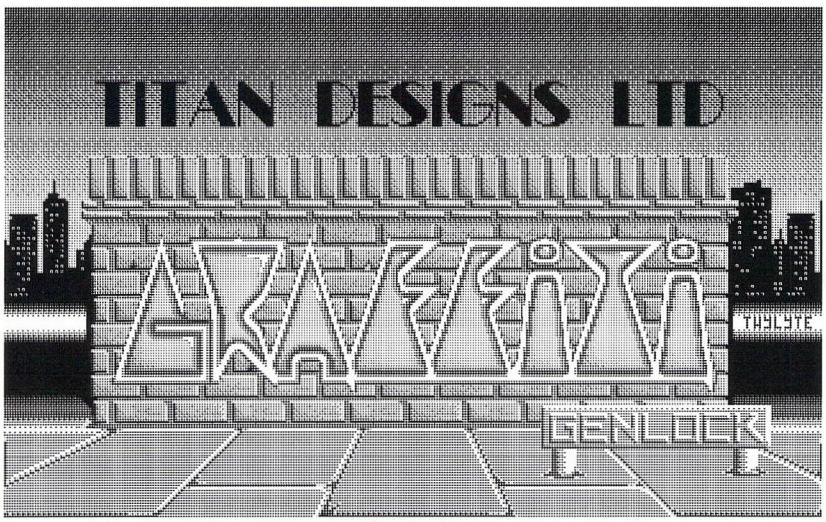

graffiti

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graffiti

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THE TITAN DIAMOND

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CREDITS

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Contributions

The articles in *ST Applications* are written by users for users. Everyone reading this magazine will have something to contribute; even if you do not feel able to do a full-length review or article there is the Forum section for short hints, tips and questions. If you are interested in writing for *ST Applications* - regularly or irregularly - please write for a copy of our terms and conditions. We always do our best to reward quality work with appropriate remuneration.

ATARI NEWS

Falcon Sells Out

Sales of the Falcon 030 have exceeded expectations and I've heard countless reports of stocks of the machine having temporarily run out. Dealers are reportedly going frantic and complaining that distributors are unable to give a firm delivery date on orders. I don't expect this to be more than a temporary setback for consumers and fully expect new stocks to be available as you read this. Atari (and usually Commodore as well) always seem to run out of machines in the run up to Christmas. However, I've never known a manufacturer to run out at this time of year. Indications seem to be that even Atari have been surprised at how quickly the user base is establishing itself. This is even more surprising since until recently only the 4Meg model with 65Meg hard drive (retailing at £999) was available. Surely this gives a glimmer of hope for mass market penetration when the non hard drive models arrive.

New Falcon Releases

Since the Falcon went on general release in March, there has been a rush by developers to get software out for it. Over twenty titles are already available for the machine with several times this number currently in development. I'm glad to say that Atari have recently given us some details of several of these releases.

I mentioned Euro-Soft's Photo Studio in the last issue but was unable to give any details as to price or availability. The good news is that Compo Software will be handling the product in the UK. In addition to what was said last month, it is of note that all Photo Studio's retouching tools are available in zoom mode and its extensive file support includes the fast Atari JPEG decoder. Compo also have five other Falcon specific products on release. Screen Blaster is a hardware add-on which gives the Falcon a resolution of up to 1152x860 pixels in 256 colours. It plugs straight into the Falcon's video port, thus eliminating the need to open your machine and void the warranty.

Over Genlock is a professional genlock designed for use with Compo's own video titling software. As the name suggests, it makes full use of overscan. MatDigit is a video digitiser which is capable of grabbing a true colour picture in 2 seconds. It can also grab pictures in 256 grey levels at a rate of 12 pictures per second. Musicom features 2 track direct to disk recording with DSP generated effects and has a karaoke option thrown in for good measure. The final release from Compo is Falcon Speed which is, unsurprisingly, a PC emulator for the Falcon. It plugs into the dual processor slot inside the Falcon and is based on a '286 processor, supporting VGA and SVGA modes. For full details of Compo's Falcon software contact Compo Software, 7 Vinegar Hill, Alconbury Weston, Huntingdon, Cambs; Tel: (0480) 891819.

Serious software for the Falcon is not an area to be monopolised, despite Compo's best attempts! Notable releases have also come from 16/32 Systems, GCS ComputerBild and D2D. 16/32 have Prism Paint and Xenomorph 3D. Prism Paint is Degas look-alike which runs in any resolution and supports Speedo GDOS fonts. It also has a few animation tools. Prism Paint has always been Falcon compatible in both 16 colour and 256 colour modes. However, the latest version has greater file support and fully supports the Falcon's new resolutions. Xenomorph 3D, despite its name has nothing to do with morphing. It is a true colour 3D rendering package which supports Cyber Control, CAD 3D2 objects, multiple textures (such as wood, marble, etc.) and has basic animation features. For details of Prism Paint or Xenomorph 3D, contact 16/32 Systems, 173 High Street, Strood, Kent; Tel: (0634) 710788.

CGS have recently released InShape, a professional modelling/raytracing/rendering package which makes full use of a 68882 maths coprocessor if fitted. For more information contact CGS ComputerBild, 19 Ledbury Place, Croydon, Surrey; Tel: (081) 686 8121.

Last but not least are D2D who have two new releases. 4T FX is a four track direct to disk recording program which features DSP generated effects. It comes complete with a direct to disk module for use with Cubase. D2D's other new release is titled 41/40. It too is a direct to disk recording program and features 4 channel stereo analog input and output in a professional format using high quality Delta Sigma converters. It includes AESBU and SPDIF functions. Contact D2D Systems, St John's Innovation Centre, Cowley Road, Cambridge, CB4 4WS, Tel:(0223) 420252. (See review this issue.)

What Is This Jaguar?

Atari have finally announced the launch of their 64-bit console, the Jaguar (first mentioned is ST Applications issue 8!). Those of you with long memories will remember that development of the 16-bit Panther was dropped suddenly in favour of the Jaguar about two years ago. The machine will incorporate the latest technology (not yet available in home computers) and is based around Atari's own 64-bit RISC processor. Its capabilities extend to 24-bit true colour graphics in 16 million colours and the ability to produce 3D shaded polygons which can be manipulated in real time. Like the Falcon, the Jaguar has a DSP chip fitted as standard and this will be used primarily to manage the machine's audio capabilities (16-bit stereo at CD quality). Atari are to use their own proprietary cartridges known as MegaCart.

The machine will also be able to interface to CD players and will be fully compatible with audio CDs, CD+G (as used in karaoke) and Kodak's Photo-CD players. The Jaguar is an expandable machine with a 32-bit expansion bus and DSP port, allowing it to connect to cable and telephone networks amongst other things. I'm beginning to ask myself who needs these features on a games console? Could the Jaguar emerge to be more than 'just a games console'? Certain areas of the press are already suggesting a range of add-ons to turn the Jaguar into a 'real' computer. Personally, I expect that this will come but not for several years. It's still far too expensive to produce a full blown 64-bit computer but costs will fall and Atari already have the technology. The Jaguar is to be released in New York this autumn and will be available in the rest of The States within twelve months. Atari are busy converting two of their existing titles to the Jaguar and have three new titles in development. Third party developers are also working on software but no details were given of the titles in question. The Jaguar is to be manufactured in the USA and no date has yet been announced for its release into the UK. Atari's press office have stated that "The Atari Jaguar will retail for approximately $200...". If that's not competitive, what is?

Read_Me 1st

Subscription Expired? If you received this copy of *ST Applications* through the post, check the first line of your address label carefully: if it reads **STA32**, then your subscription has expired with this issue; if the information line reads "Complimentary Copy" you have been sent a free evaluation copy of *ST Applications*. Either way, you must take out a new subscription in order to receive further issues.

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Contact us for details of your nearest *ST Applications* stockist.

Disk Mags

These are bi-monthly compilations of the best PD software to come to our attention in the preceding couple of months - not magazines on disk. The next Disk Mag, **DMG.36**, will be dispatched a few days after this issue is sent out.

Digital Dimension Share More

Digital Dimension, the team behind two of last year's popular Shareware releases, Jiggers and Fruit Pursuit, have just released a third title with two more on the way. Digital Dimension's Mark Pearson said, "We had a great response from users who registered with us, and this success has encouraged us to accelerate our operations with numerous exciting titles for 1993. These new games will exploit the talents of graphic artists, musicians and programmers we have met through the shareware network." Their latest release is called Kubes and is described as being "a bit like Tetris, only in reverse". It is available from the ST Club for £1.45. Korogasho and Vibro are to follow later this summer. Digital Dimension have adopted the policy of releasing full games as Shareware with the offer of another full game if you register with them. This in itself is not unusual. What is, is the fact that the game being offered to registered users is exclusive to them and will not be put on general release. The concept seems to working so far. For more information on Digital Dimension or any of their products, contact *Digital Dimension*, 160 Great Meadow Road, Bradley Stoke South, Bristol, BS12 8DA.

A Tough Time At Commodore?

The recent revival in ST software and hardware sales, combined with more than encouraging sales of the Falcon, must surely be reason enough for some cheer at Atari. However, the biggest asset Atari have at the moment are their arch rivals Commodore! Atari don't seem to be able to put a foot wrong at the moment when Commodore seem to be facing increasing difficulties on all fronts. Their top management are dropping like flies. Last October Steve Franklin, their UK boss for as long as anyone can remember, left the firm just three months after giving up the top job to promote the CDTV throughout Europe. Since then the CDTV has been dropped and Franklin has set up a UK subsidiary for a US firm which produces PC software! The new man at the helm was Kelly Sumner, who lasted less than a year and now heads the European operations of Gametek, a US console publisher! David Pleasance and Colin Proudfoot took over as joint managing directors just a few months ago and are still in their posts as we go to press. However, in the past couple of months, their general manager for CD development, international sales manager and retail marketing manager have all joined Sumner at Gametek. They have also experienced trading difficulties, posting massive losses for the first quarter of 1993 (as reported last month). The result has been a worldwide restructuring of their operations with the closure of offices in several European countries and only a skeleton staff running their US office. It is also rumoured that Commodore recently posted an anti-bankruptcy bond in the US. Assuming this to be the case, it will be the second time in their history that such measures have been taken.

Fractal Music Updated

Datamusic's Fractal Music program has been updated once again. The major change is that it now supports MIDI Thru, thus eliminating excessive fiddling about with leads. A small problem which caused notes to 'hang' on some of the more recent models of multi-timbral instruments has also been fixed. Users wishing to upgrade from previous versions should return their master disk along with a cheque for £5.00 (£7.50 for overseas customers) to Datamusic, 57 Cricketfield Road, London E5 8NR.

Oscar Music Productions Ltd of 91 Brick Lane, London, E1 6QN, Tel: (071) 377 6294, have recently been appointed exclusive distributors for Fractal Music. Users wishing to purchase the program should contact them, not Datamusic. Although the present upgrade is being handled directly by Datamusic, Oscar Music have taken over distribution of the full package with immediate effect and will be responsible for any future upgrades.

News In Brief

Microdeal Joins AVR In HiSoft Camp

Just weeks after announcing the aquisition of Audio Visual Research, HiSoft have bought Microdeal. This is despite having recently pledged that Microdeal would continue to handle the marketing and sales of AVR products. The result of the deal is that Microdeal's St Austell base has closed and all business has been transferred to HiSoft's headquarters in Bedfordshire. The take-over effectively transfers the Microdeal name, all existing Microdeal products and Microdeal's production and packaging facilities to HiSoft. It is unclear at this time whether or not John Symes, former proprietor of Microdeal, will be joining HiSoft. Needless to say, HiSoft are to continue support for the Microdeal range of products.

Sorry Darryl!

I would like to apologise to Darryl Still, Atari UK's Marketing Manager, over a misunderstanding arising from a news item in issue 31. Although the Falcon will be available in a new casing later this year, it was never publicly stated by Mr Still that this would happen in June. My source of information on the Falcon casing was another publication who have since admitted having misquoted Mr Still.

Sony Buys Psygnosis

In a surprise move, leading games publishers Psygnosis has been sold to Sony Electronic Publishing. Sony have made no secret of their intention to break into the European software publishing market and have several titles in development. What is surprising is that Jonathan Ellis and Ian Hetherington were willing to sell their company at a time when they were going from strength to strength. The result of the deal is that Ellis and Hetherington will become joint managing directors of Sony Electronic Publishing's European operations as well as retaining the same positions within Psygnosis. The company will continue to develop new software both under the Psygnosis name and for Sony. A substantial sum is reputed to have been paid by Sony for the aquisition of Psygnosis.

Computer Support On Sky

Cable and Satellite TV viewers may be interested to know that Sky One's teletext service have recently set up a section for computers called Power Zone. It runs to about 30 pages and is updated a couple of times a week. The new service deals with home computers, games consoles and basically anything else computer related. It will not merely be a simple collection of reviews. Power Zone is to be structured like a magazine, concentrating on special features and general articles of interest to all computer users.

Bad News!

Yorkshire TV's Bad Influence (the show where the Falcon made its TV debut) is set to return to our screens on 9th September at 4.45pm and will run for another fifteen weeks. The show was well received first time round with viewing figures of around 4.5 million. It is aimed at teenagers and follows a magazine type format, being classified as a factual programme. Rather than being 'just another computer games show', Bad Influence also looks at the latest technology being put to practical use.

Falcon News

Courtesy of Piper

Cubase Audio

Steinberg are planning to release their Cubase Audio for the Falcon in summer. This package will allow a full eight tracks of digital recording and has already been seen at shows, but does not yet have Steinberg's approval for release, some final hiccoughs still needing to be smoothed out. Firm pricing is still not established, and hardware add-ons to allow the separate recording of each track are not yet spoken of in public.

New-look Falcon?

Rumours flit, float and fly about the imminent arrival of a new Falcon. Due to arrive in September, the new machine will be in a completely different casing which would slot into a music studio rack system or fit in with the home hi-fi, with a separate plug-in keyboard. The current Falcon was plonked into an ST case since it was designed on an ST board. The new one won't be, featuring a slightly upgraded board with full 32 bit communication between its residents rather than the present 16 bit bus which slows down some operations, and a case which will allow for more room to plug in add-ons. Certain Falcon "teething troubles" are also due to be sorted out as it's re- housed, but it will be essentially the same machine. Since we've not yet seen one, we can't say for certain that it won't repeat the "almost there" arrival of its older sibling, but we sit in hopes. It's currently expected to hit the shops at the same price as the present version, but changes in the exchange rate may influence this, possibly for the better.

Also dependent on the exchange rate is the price of the 1Meg Falcon, which now has an RRP of £599, but has yet to be spotted in this country. By the time it actually appears, Atari are hoping to be able to at least reach a compromise between the original £499 and the current price.

Atari to advertise

Atari are advertising! No, seriously, they are. The current set of ads will be in ST magazines, one PC magazine and one Amiga magazine and will feature many parts of the anatomy. An ear, eye, nose and mouth will be floating around a Falcon all in diagrammatic form with the phrase "If you understand this, you understand the Falcon" beneath it. A little daring. The ad will then move on to music magazines with mikes, MIDI, keyboards and suchlike taking the place of the various parts of the body, with the eventual aim to get across the idea that the Falcon is all about communication, so stereo, video and even telephones will be turning up as the ad spreads through different markets. At no time will the Falcon be described as a home computer, as Atari want it to get through to the 90% of the population who haven't got home computers. By September, there will even be TV ads, a 30-second generic blast for Atari and two 10-second snippets for the Falcon and the Lynx. The likelihood of ads for the Jaguar are still slim since a) Atari can't admit it exists yet and b) it's expected to start life in the USA and settle in there before migrating across the Atlantic.

Titan products

Titan Designs are planning on letting loose a slew of Falcon products. Those which they currently have in front of them are a range of Genlock and Digitiser add-ons with a suite of software to get the best out of them. The first due out is Graffiti, a True Colour video genlock priced at £149.93 (weird price) which will allow text and objects to be manipulated onto existing video input by fading, dissolving, exploding, whatever seems appropriate.

Exposé, a real time True Colour video digitiser, will allow you to import video images at 10 frames per second from any video source.

Fresco, the studio quality True Colour genlock, will then take images such as these and play them back in real time whilst also adding text and object manipulation, including the ability to use morphing, currently seen on things like ads for cars where one car changes seamlessly into another, but which a few years ago would require a wall to wall computer system, and a few years before that was outrageous science fiction.

And the really incredible thing about these Falcon products is that they'll run on an ST too.

Also being investigated by Titan are screen display enhancers to allow True Colour on VGA screens and ways of getting the Falcon to swallow SIMMS, making memory upgrades much cheaper and simpler. But these are still under consideration rather than under development. Let's hope they get here, and soon.

Better than...

Rombo surprised themselves at their stand at the Computer Shopper show where they were able to show a Vidi product for the Falcon. They didn't know much about it themselves since it had only been delivered to them that morning, but it offers photorealistic image capture, allows for animation and produces results "much better than the Amiga". The Amiga on the stand was an A4000/30. Not a bad recommendation.

Memory boards

Marpet are currently anticipating the arrival of their board to allow for upgrading of the Falcon using 72 pin SIMMs which will allow for 32 bit communication. It will also allow for substantially cheaper upgrades than those from Atari. The board will not be an "intelligent" one like the Xtra-RAM +8 which is allowing ST users to upgrade to 12Mb, so is expected to be in the same price range as the Xtra-RAM Deluxe and will not extend the Falcon's memory beyond its 14Mb limit. But at least it will allow you to reach it. The STE and Mega Xtra-RAM +8 boards should be hitting the shops in bulk by the time you read this. The first week of release showed a surprising reaction from the States, where the same hefty quantity of boards were ordered as for Europe.

Marpet are also working on releasing a low cost genlock for the ST, with hopes that they'll be able to expand it to the Falcon should there be sufficient market.

Larger hard drives

Gasteiner are offering Falcons with larger hard drives. The largest on offer is a 550Mb brute, but more commonly asked for is their 240Mb package which comes with the Falcon and 4Mb of memory for £1299. Their upgrade to a 32MHz processor with 32Mb memory adds another £599 and is made to order, rather than being an off-the-shelf product.

Work is currently underway on a flat bed scanner for the Falcon, but details of price are currently unavailable.

Demo's

Demos are filtering through for the Falcon. Currently in the possession of the ST Club is a bunch of demos from Black Scorpion Software, team working on the development of Falcon specific games.

Plasma30 and *Plasma50* both take a True Colour picture and spin, scale and stretch it (at either 30 frames per second or 50 frames per second), and play a 16bit 50kHz stereo soundtrack.

Intel shows some True Colour fractals taking over the whole screen, then has a playful dig at some recent Intel hype.

Speeder has been spoken of before in these pages, being on display when Atari demonstrated the Falcon to us. It shows a True Colour fractal generated landscape, nice enough but not an artistic masterpiece. It also shows us a ship hovering above it. Using the mouse, you can twist and turn through the landscape at high speed with no jittering or flickering, whilst a 16bit 50kHz soundtrack blasts through the headphones. The graphics are based on the SNES mode 7 chip, with full 3600 rotation.

Something very interesting in these demos is that it doesn't matter what your resolution is, nor how many colours you've selected, it still plays back at the same size and in True Colour mode, though not on a VGA monitor since Atari have decided not to let them display True Colour, then switches back to your selected video mode, which brings a flicker of hope to being able to change from one screen setup to another without having to re-boot.

Meanwhile...

Commodore have posted a loss for the quarter ending March of $177.6 million, making a total for the first nine months of the fiscal year of $273.6 million, an unfortunate position for the US office where the Amiga does not share the British popularity. It is not yet known how this will affect their European branches. They remain confident that their new 32-bit Amiga range and the updated version of their CDTV will keep the company solvent, although they're planning to do some major restructuring.

Gasteiner Readers' Offer

Gasteiner Technologies are offering readers the following list of software at specially reduced prices:

Migraph Software

Easy Draw Super Charged	£29.95
Easy Tools 2	£15.00
Easy Draw 3	£29.99
Easy Tools 3	£15.00
Latest Touch Up v1.8x	£34.99
OCR Junior	£39.99
Full OCR	£49.99
Draw Art	£14.99
Scan Art	£12.99
Upgrade Touch Up v1.8x	£29.95

(all the above complete with manuals)

Super Charged Easy Draw 2 HP DJ driver	£4.99
LaserJet Plus driver pack	£4.99
HP Plotter GDOS driver pack	£4.99
Toshiba 24-pin driver pack	£4.99
Rolland Plotter GDOS driver pack	£4.99
Houston Instrument GDOS driver pack	£4.99
Hi Tech and Rocky font pack	£4.99
HP Plotter driver pack	£4.99
Easy Draw 2, Personal Graphics Art Pack	£4.99
Easy Draw 2, Technical Draw Art Pack	£4.99
Super Charge Easy Draw 2 - 24-pin LQ800 driver pack	£4.99

There is a special offer on the following printer drivers (limited quantity available):

9-pin:	£12.50
24-pin:	£15.00
Colour:	£17.50
Laser:	£20.00

Contact:

Gasteiner Technologies
Unit 2-5
Millmead Business Centre
Millmead Road
London N17 9QU

Tel: 081 365 1151;
Fax: 081 885 1953.

Support For Falcon Owners

The Falcon Owners' Group (FOG) are a new user group dedicated to supporting Falcon owners. They claim to have full written backing and support for their activities from Atari UK and produce a bi-monthly magazine called Falcon Update. I have yet to see the first issue of their magazine but am assured that it will be available as you read this. The first issue runs to 32 pages and is aimed at the non-Falcon owner thinking of buying a machine. It includes an interview with Darryl Still, Atari UK's Marketing Manager, a roundup on all software currently available, an article on the technical aspects of the new machine and an interview with Sinister Developments. FOG also have a support area on Holoduck BBS, a member of the NeST system, on 0454 317047 (300-14,400bps). Messages can be left here and FOG members can download the latest Falcon software. Issue 1 costs £1.50 (£2.25 with a disk of Falcon PD and Shareware) and is available from Richard Davey, Falcon Owners' Club, 10 Oak Drive, Portishead, Bristol, Avon BS20 8QS; Tel: (0275) 843241. The subscription fee is £9.99 for 6 months or £16.99 per annum and gives the user discount on special offers, discount on Falcon PD and free technical support by telephone, post or BBS in addition to the relevant issues of the magazine and cover disk. Please make cheques payable to 'Falcon Owners' Group'.

Cat Eats Bird?

June 28, 1993 - Sunnyvale, CA, USA - Atari Corporation announced today that it has contracted with the IBM Corporation's Charlotte, North Carolina, facility to manufacture the Atari Jaguar, Atari's new 64-bit multimedia entertainment system.

IBM's multi-year contract is valued at $500 million.

"This system is clearly the wave of the future," said Sam Tramiel, president of Atari. "Because the Jaguar will feature such an array of visual and audio special effects, we wanted to work with a premier company that we are confident can manufacture the quality product we have developed".

The Charlotte-based IBM plant, which for 15 years has manufactured and developed products only for other IBM businesses, just recently began working with outside companies to meet their production needs. The Atari Jaguar project represents one of IBM's first entries into manufacturing for the mass consumer electronics market.

"This is a wonderful opportunity to work with Atari and their new system," said Herbert L. Watkins, director of Application Solutions manufacturing at IBM Charlotte. "Everyone expects IBM to manufacture complex information technology products, and with this, we'll show that we can competitively build a sophisticated consumer product."

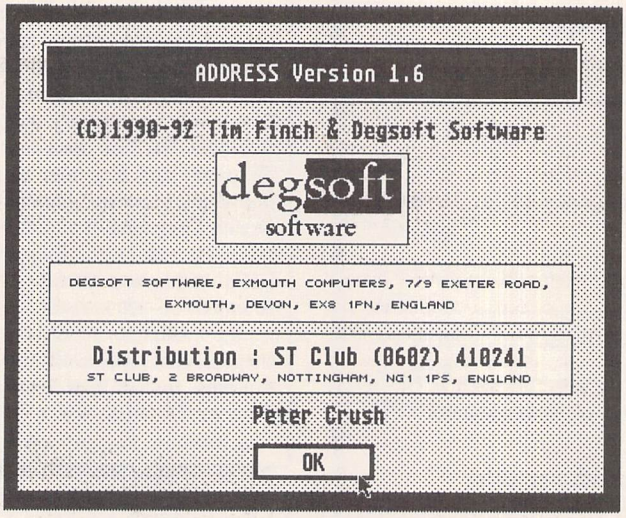
In addition to assembling the Jaguar, IBM will be responsible for the component sourcing, quality testing, packaging and distribution. The Jaguar, first announced on June 3, is based on an Atari designed proprietary 64-bit RISC processor that features four times the technology currently seen in the marketplace today. The sound system is based on Atari's proprietary, high-speed, Digital Signal Processor dedicated to audio which can produce CD quality sound.

The Atari Jaguar will be available on a limited basis in the fourth quarter of this year, focusing on the New York market. A national roll-out is expected next year. The Jaguar will retail for approximately $200.

The IBM Corporation's Charlotte facility manufactures and develps for IBM and other companies a wide variety of products, such as banking systems, automotive diagnostic systems and electronic circuit boards.

Smart Address

Peter Crush looks at the latest computerized way of fixing abodes, and concludes that it could be right up your street.



Tim Finch's Address v1.6 displays a snazzy logo when you click on the Info button, and it also shows the name of the registered owner.

There is no shortage of database programs for the ST, from the many inexpensive public domain offerings, through a number of mid-price shareware programs, to top of the range commercial products such as Prodata from Arnor or Superbase from HiSoft. Most of these are jam-packed with features, but their comprehensive facilities can take a lot of setting up to get the best from them. In fact many are just too darn complicated, hence although many of us have a decent computer system we probably still use old technology in the form of a dog-eared notebook. To get back to basics, not many people run high-powered organisations requiring a complex database. All that many ST owners require is something to keep track of names and addresses, for example their friends and family, business contacts or club members etc. With this need in mind, The ST Club have just launched a new utility called Address v1.6, a program which helps you to keep tabs on all those folk in a very direct manner.

Address actually started off as an "Shareware" product, and as users registered with the programmer Tim Finch, their various suggestions were incorporated into the software. The distribution has now been taken over by The ST Club, and Address is a fully commercial product. It comes on a double-sided disk, and in common with many programs lately, it utilizes a user-friendly method of piracy prevention in that the program has to be installed with the user's name before the software can be used. Once personalised, the software is subsequently not copy protected, enabling back-up copies to be made. Address runs on any ST in High and Medium resolution, and the manual states that TT and Falcon compatible versions are currently under development. Tim Finch may be pleased to hear that when tested on a Falcon, both the program and accessory seemed to run perfectly well already!

The Installation procedure sets up the program to run on either a floppy drive or hard disk system, and is both well described in the Manual and more or less idiot-proof in execution. Rather unusually, two A5 printed Manuals are provided. The first one is 44 pages long, deals with the main database program and explains all the important features. The second booklet is a further 20 pages in length and goes into the workings of the Address Desk Accessory also supplied, which enables you to access Address data from within other GEM programs.

Little black book

So how could Address replace your normal method of looking up where to send your letters, and why should you want it to? Basically, the program works like a miniature dedicated database which is optimised to organise the names and addresses of your contacts. It will store them, find them, insert them into your documents or print them onto envelopes or labels. It will even phone people up for you! In fact it does lots of address-type things. So how exactly does Address accomplish these feats?

Address operates like any other GEM program, with the usual drop-down menus to control its many features. The main screen presents you with a card index-like box into which you can enter names and addresses. Its layout is pre-defined and therefore no setting-up is needed nor possible, so no need to rack your brains here. There are eight lines for data entry: the top line is for the Name of your addressee, and the next six lines are for the actual address, ending up with the obligatory postcode. The seventh line is for the individual's telephone number, all the better to give them a bell with via your modem. The final line lets you specify a "connection" or descriptive line of text, most helpful in searching and sorting the information later on. Data entry is very straightforward, and when you have entered a group of names and addresses, they can be saved to disk as a .DAT file. You can have as many such data files as you want for different groups of people, i.e. family members in one file, business contacts in another, in fact you can be a real yuppie. To speed up the entry of data, Macros can be defined for the ST's function keys, so an often repeated Connection or post Town for instance can be entered by pressing just that one key. The contents of such Macro .DEF files can also be saved to disk, and a default .DAT and .DEF file can be automatically loaded into Address when it is run. This is accomplished by specifying them in an .INF file, which also establishes various other preferences you can set for the program from the Menu options.

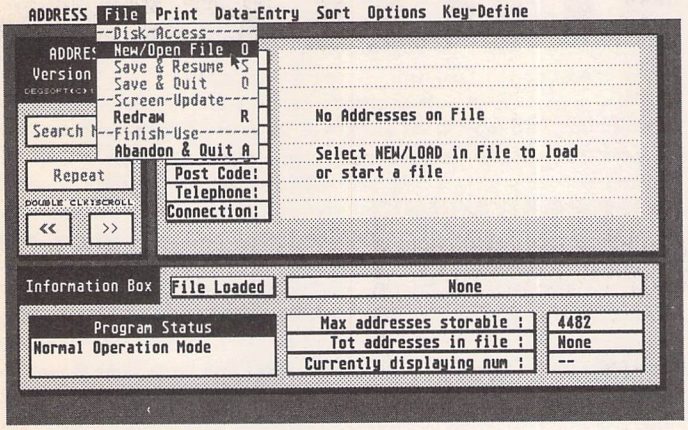
Not so simple

On the face of it Address appears to be a very simple program, and it's certainly extremely easy to use. But behind its mild exterior lurk lots of quite powerful and sophisticated features. For example, you can search the file by just entering a bit of somebody's name or part of the address, and the program quickly finds it. You can do search and replace operations, useful if British Telecom in their wisdom decide to change all the phone codes in your town again. Or why not scroll through the file by use of the familiar VCR-style "transport buttons", or even set the records to auto-scroll at the rate you decide so you can find a record manually. Other features include the ability to print labels, with a very wide-ranging setting up routine making an extremely professional job of this ability. A modem facility is even built into Address, so you can get the ST to phone a required number by just clicking on it.

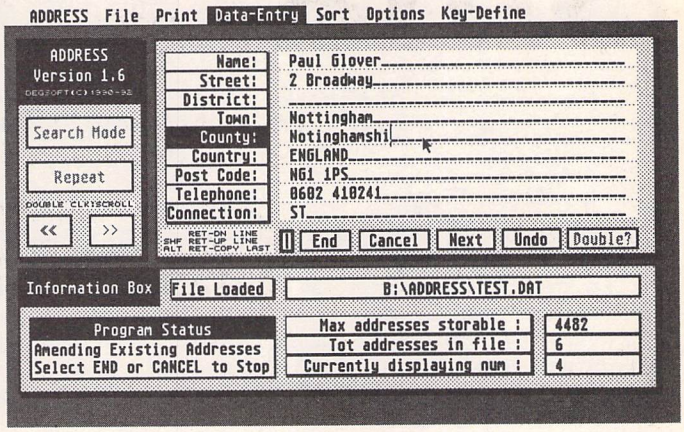
You might want to search for a particular name and address whilst using your wordprocessor. The Address DA enables you to search for the individual concerned even if you can only remember a part of his details,

Addressing Addresses in Address

The quick way to show the basics of the Address program is to take a stroll through how you load it and add a name and address.....



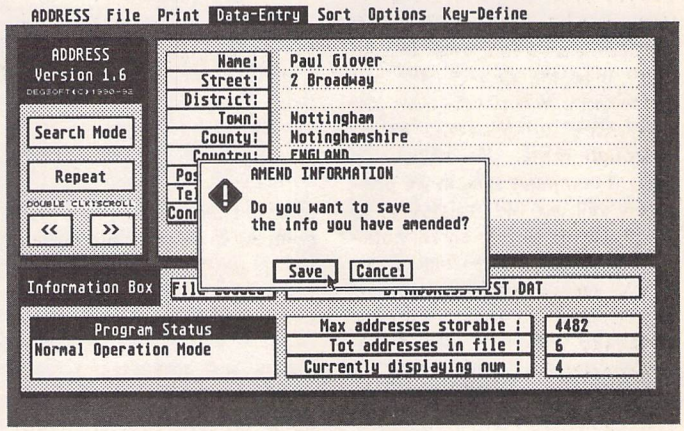
1. Unless you have set Address to auto-load a file, the first thing it does when run is to inform you that no file is loaded. This typifies how Address helpfully prompts you for most operations. Using the familiar GEM menus makes Address very easy to use, and you select the file you want in the usual way. Alternative file selectors such as UIS III are supported if you wish to use them instead of Atari's selector.



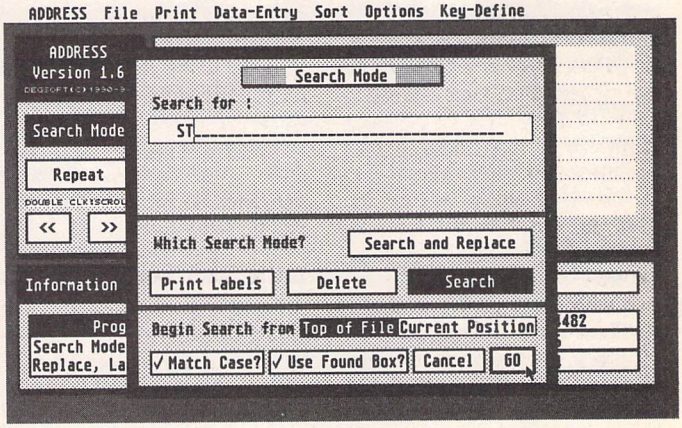
2. Data entry mode can be selected from the Menu, or more intuitively by double-clicking on the line of the card you wish to edit. In this case, even though Paul never seems to use it, the County name is being inserted onto his "address card". Other information is also neatly displayed, such as how many records there are in the file, the maximum space available for new ones, and what mode you are in, etc.

Address's Main Features at a Glance

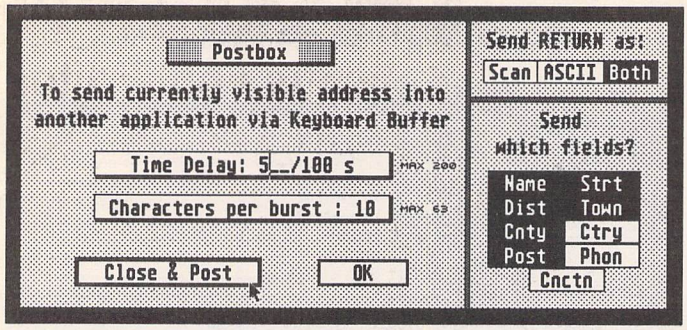
- Runs as a program, but via the optional Desk Accessory supplied data from address files can be accessed and used within other GEM programs.
- Stores as many addresses in the file as you, your disk or memory will allow. 1,000 is the upper limit on a 1MB ST with a floppy drive.
- Enables the creation of many address data files for different groups of people. These files can be loaded into the program or DA at will.
- A particular set of addresses can be auto-loaded by Address when you start the program by an .INF file which specifies the data required.
- Address's facilities enable the very easy addition, deletion, sorting, searching or other updating of addresses in your data file.
- On-screen Information boxes show the current mode in use. Helpful prompts and error trapping stops you from making any fatal mistakes.
- The sorting of addresses by a one or two field system can put your data into more or less any order required when you come to look at it.
- Definable function keys allow the quick insertion of often repeated data. Alternative sets of macros can be saved, loaded or auto-loaded.
- Labels can be printed of all or selected addresses on one, two or three label wide paper. Setting up procedure copes with all variables. ‹bullet2›A feature for printing onto envelopes is built into Address; position of text and means of sending ESC codes to your printer are adjustable.
- Address facilitates the instant production and printing of a telephone list (names and appropriate telephone numbers) from its address files.
- Telephone numbers of your addressees can be dialled by Address for you (if you have a modem), but you have to actually speak to them yourself.
- You can Time your telephone calls and keep a record of the running total of the bill as it mounts up. Copes with various charging rates.
- The Address DA will send all or part of a selected record into your document when used with most GEM-based word processors or text editors.



3. In its own almost infuriatingly too helpful manner, Address now prompts you to save the amended data - it doesn't like you to forget anything! You can back out, or even turn off such warning messages from within one of the menus, but until you become fully conversant with the program, warnings are quite beneficial. So-called "flying defaults" make the right choice of button for the next logical action.



4. If you can't remember the full details of one of your subjects, you can search for them with this feature. The text string you enter in the search line will be looked for in all the fields of the "cards", and it can be case sensitive or not. If more than one match is found, the default button becomes "Next", allowing the next one to be shown. The records selected in this way can be printed out onto labels too.



The "Postbox" option is a clever way to insert the details on the card into a document currently open. Select the lines from the card you want to copy by clicking on the options, and when you exit they are "typed" into your WP. Works well with most applications tried.

and having found it, the data can be "posted" into your WP. Posting utilizes the ST's keyboard buffer, and the name and address selected is "typed" into the document just as if you had really typed it manually. In fact you can decide what parts of the data you want. For instance, you might not want the full address but just the road and town; no problem - by clicking on just those fields you need, these will be the only ones sent to your WP. The posting feature does not work completely successfully with all WPs and other programs, and this is acknowledged in the Manual. However, it seemed to operate OK with a number of programs including That's Write 2 and EdHak, a text editor DA. There were problems with Protext, however, which reportedly uses the ST's keyboard in a non-standard way. You have to be able to exit from the Address DA fairly quickly so that text it is about to send can be received by your main application. This is awkward with Protext because of the way this non-GEM program uses DAs. No doubt such minor bugs will be fixed in the promised future versions of Address.

Summary

Points for:

- ✓ Extremely easy to use
- ✓ Full of features
- ✓ Bargain price

Points against:

- ✘ No room for extra data fields
- ✘ Set format incapable of variation

Conclusion

Address is designed to be a simple to use, dedicated database for names and addresses, and succeeds admirably in meeting this criterion. In fact it goes much further than this in many respects, with excellent facilities for printing labels and producing telephone lists etc. For such a modestly priced utility with powerful abilities, it almost seems unfair to level any criticism at it. However, it could definitely be improved in a few areas, and I hope the programmer will not take offence if I make the following suggestions.

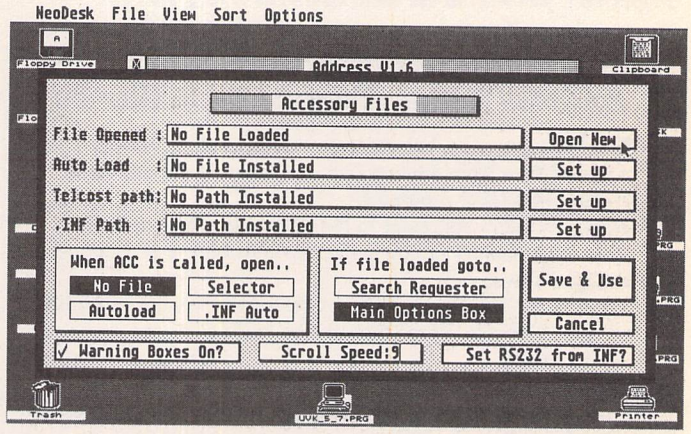
The addition of another "unseen" field for sorting names would get around the problem that "Paul Glover" for example gets sorted by Address to appear before "Peter Crush". Nothing wrong with this, except that when you come to produce an alphabetical list of people, you want the C's to appear before the G's! Titles such as Mr., Rev., Dr., etc., cause similar problems. As Address is specific to handling names and addresses, I reckon that it ought to sort out this drawback, if you forgive the pun! Next, although the Connection line enables you to insert a small amount of information about the addressee, it would be great if you could "turn the card over" and be able to type in a few lines of info, e.g. birthdays, personal notes, etc. OK, it would take up a bit more memory, but it would make the program more useful and more potentially versatile, especially if you could search this data too.

No program is perfect, and I don't want to put anyone off Address as it's the best little application of its type I have come across. You can switch on the ST and use it straight away with nothing complicated to set up, and you can't say that about many databases! Address has a very nice "feel" about its entire operation, it's solid, seemingly un-crashable, attractive, and, by golly, it's British! I can see many individuals and small organizations finding this just ideal for them, and look forward to the enhanced versions that will doubtless follow on.

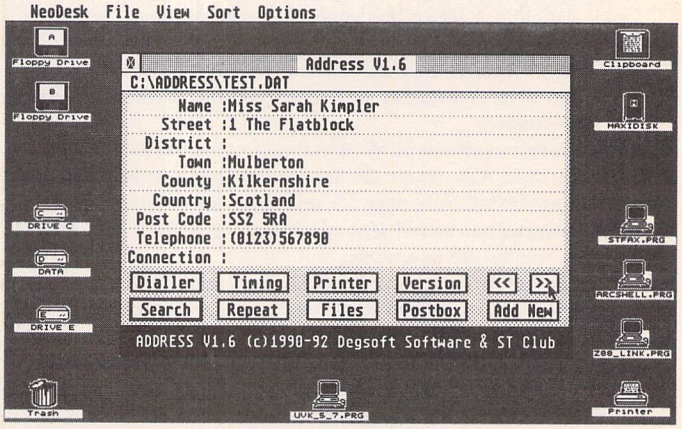
The Address Accessory

Rather unusually, the Address Accessory is not simply the Address program running as a Desk Accessory. The Address DA is a quite separate utility, which cannot operate without the Address program, although the Address program works without the DA. Confused? Let me explain it better!

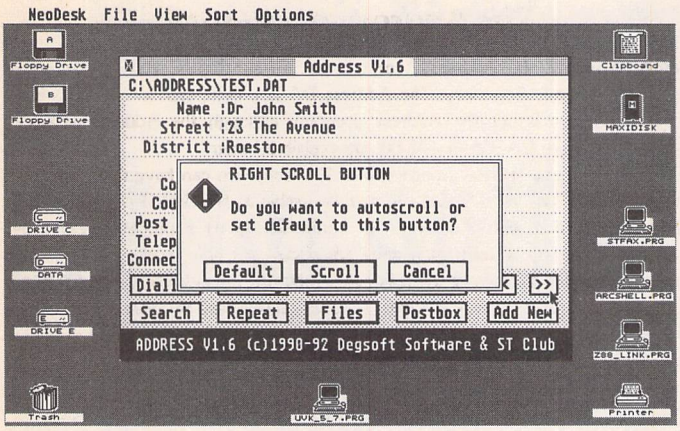
Many programs such as Imagecopy or FastCopy Pro can have their extender renamed from PRG to ACC and will then be usable as ST Desk Accessories. But you can't do that with Address - it works strictly as a program only. The Address Accessory is something quite additional, and only works by accessing the data prepared by the program. So when you call the Address Accessory, the first thing it does is to look for data to load, which must be available on either your hard disk or the appropriate floppy ready in its disk drive. Although you can access any information you want this way, you aren't advised to use the DA for the adding of large amounts of new information, even though inputting new records is possible. The declared purpose of the DA is to enable you to look up data whilst using some other GEM program, rather than to duplicate the full use of the program. Using the Address DA is however quite useful in many ways, especially with a hard disk where the speed of data loading is much faster than using floppies. If you don't want to leave the Address accessory permanently installed, you can load it as required using "The Chameleon" DA. Although the dual Address program and accessory make for a flexible system, I can't help feeling that if they could be combined into just one application they would be much simpler to use and generally better.



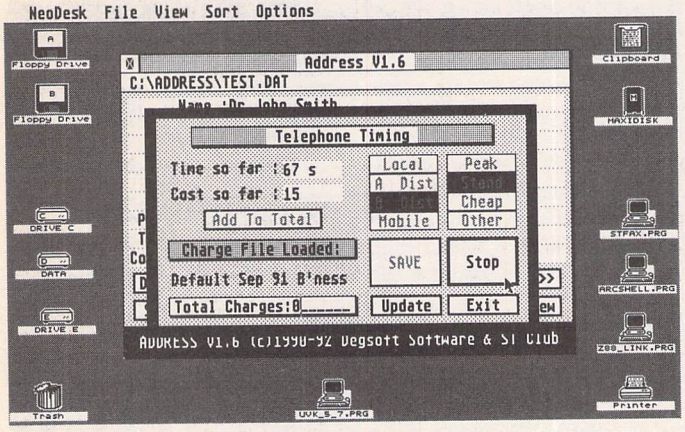
1. The Address Accessory looks for these four files when you call it. They can be specified in the .SET file, which is an information file for the accessory. Otherwise you can load them at will, and this dialog is obtained by clicking on the "Files" button from the main screen of the DA. Any Address file can be set to auto-load, or you can select one manually, as is going to be done here.



2. When you have loaded the file, address cards are displayed in the same way as from within the main program, but in a smaller window. This can be moved around the screen by dragging it with the top bar if you want. You can scroll through the records by clicking on the "VCR buttons" or even invoke a search by entering a string of text after pressing Return to activate "Search", the flying default here.



3. By double-clicking on the right hand scroll button, you are given the option of making it the new "flying default". This rather ingenious option should be added to other programs: it makes them all the more personal and configurable to the exact way each particular user utilizes them. If you were to set this to the new default, the border would thicken like that currently shown on the "Files" button here.



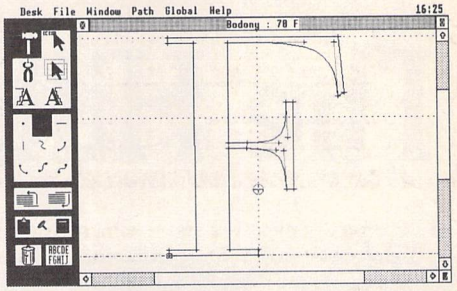
4. The timing of your telephone calls is one of many clever ideas in Address. Just click on the Start button when you start, and yes, the Stop button when you finish. Or alternatively, simply use an egg timer. The unit costs have to be entered up in a little file, which allows you to specify the local currency and call rates, so you can (theoretically) use this feature anywhere in the whole wide world.

Product:..... Address
Version:..... v1.6
Supplier:..... The ST Club
2 Broadway
Nottingham
NG1 1PS
Tel:..... 0602 410241
Fax:..... 0602 241515
Price:..... £12.95
System:..... All STs, STEs, Falcon compatible
Manifest:..... 1 d/s disk, two A5 printed manuals

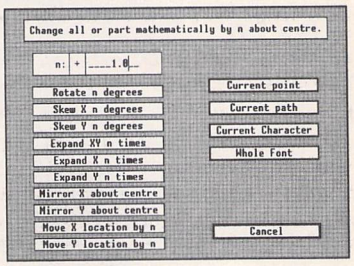
Fonty

Calamus Font Editor

This is a fully featured editing program for creating and editing Calamus CFN-format font files. Also, when used in conjunction with C-Font or Fontkit Plus, CFN files created with Fonty can be used to generate sets of bit-mapped fonts for use in packages such as: K-Spread4, Degas Elite, Timeworks DTP, Calligrapher, That's Write, Redacteur 3, and Wordflair.



Fonty features include: draw mode icons (Hammer mode, Pliers mode, Move mode, Select path mode, left and right kern mode), Grids and Guide Lines, Manual and Automatic kerning, Backgrounds for tracing (a Degas picture or a complete GEM font), a full feature Calculator to mathamatically manipulate fonts, and Window scaling. A separate program, PFB2CFN, reads a Postscript Type 1 Font file and copies it into a Calamus CFN font file.



£11.95

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- View picture files (sixteen different kinds) in colour *or* mono. Converts colour to mono or vice versa. View STe pictures on a regular ST, too!
- View (and extract) ARC and LZH files, even "lh5"-compressed LHarc files.
- Play digitized sounds through ST or STe hardware at any speed from 5KHz to 30KHz, even through DMA hardware!
- View SEQ and DLT animations, even if you don't have enough memory!
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- Supplied with comprehensive printed manual.

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Written in the USA by:
dmj software

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Sometime next spring, Phillips are expected to release recordable CD, a way of digitally recording on to a disc at home.

We don't have to wait. We've already got it....

The Hills are Alive with...

...the sound of stereo direct-to-disc recording software investigated and put to the test by Piper.

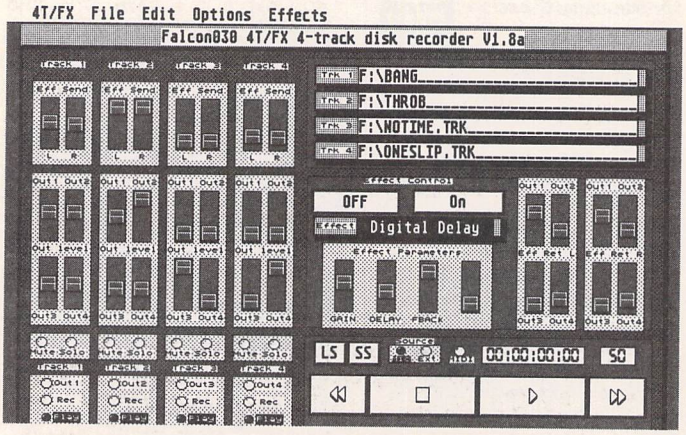


Figure 1

Simple, innit? You don't even need the menu, since nearly all the functions are replicated on screen so that you can use it as an accessory.

Close Encounters

Like most of you, I'd heard of D2D because of the work they were doing on a direct to disc recording package for the Falcon, where you can digitally record pretty much anything at high quality then play it back through the computer. Unlike most of you, I only live just down the road from them and so was able to blunder into their office where the goods were patiently demonstrated to me. This was the first time I'd heard the Falcon through anything other than a monitor speaker, and finally I was able to hear that it really did sound good. Some CD tracks were recorded onto the hard drive and played back with lots of different effects. It was lovely. I'd taken it on faith before that the Falcon could do it - now I had the proof. I begged and pleaded and eventually they let me take a copy of the program with me just so they could shut the building up and go home.

Dingle, Dangle, Dongle

What the package consists of is two programs and a dongle. First, the dongle, unusual in that it's a hermaphrodite, having both male and female bits, and plugs in to the printer port whilst allowing the printer to be plugged into it, without interfering with printing. I liked that. Presumably this will mean that other dongles can also slot in without causing any problems. Nice. It also means that the programs are completely unprotected and can be copied wherever you want, since they will only work with the dongle in place. The main program is 4T/FX, basically a four track recorder with some effects. With it comes D2D Edit, a stereo recorder and editor which is also available as a separate package. Not wishing to do a cheapie review, I booked some time in Cobra Studios in South London and marched the Falcon down there for some serious thrashing.

Once two is two...

To start with, we dipped into what we thought would be the simpler package, D2D Edit. We immediately ran into difficulties. To record on the Falcon, you've got to go in through inputs 1 and 2. These are microphone inputs, not line inputs. Of course, the studio had mikes, but only powered ones delivering line level output. D2D Edit has input level monitors to show how high the input is, but contains nothing to control it. The Atari control panel does have level settings, but Edit (and 4T/FX) tends to ignore this, so we had to cut down on the output of the mixing desk. No real problem, but it does mean that there's a mismatch of impedances owing to the Falcon design. D2D bewailed this, but the reason is fairly obvious: Atari have been talking of doing a video phone based on the Falcon, and so want a mike input. Inconvenient, but not suicidally stupid.

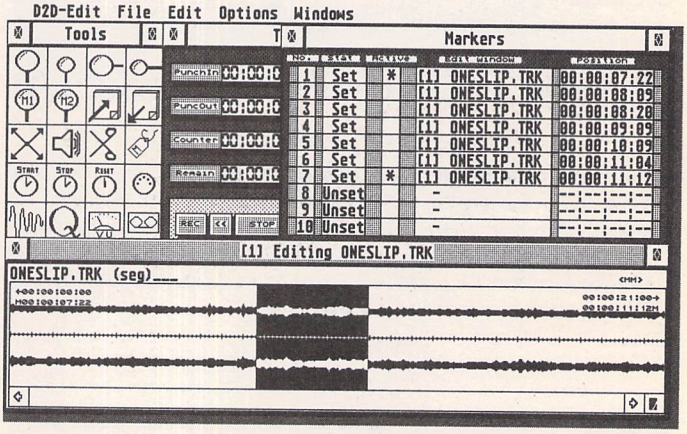


Figure 2

Not quite such a simple layout, but fairly easy to get around.

Similarly, the output is for headphones rather than phono, so there's another part of the musical cycle that's not quite up to scratch.

The Manager got Edit set up to receive an input at a reasonable level, looked at me in trepidation, and pressed Record.

Something the D2D manual warns you about is that this whole process has a huge disc appetite. If you're recording at 50kHz on the internal disc using one of the 16Mb partitions, the most you can expect to get is 1min 20secs. Completely true. We went up to about 40secs and stopped so that we had some space left for editing.

First of all, we played back what we'd recorded, and even The Manager with his finely tuned ear couldn't tell the difference between the "straight through" sound and the recorded one.

Then, on to the edit.

Words with the Editor

The editing section has some interesting ways of handling things. If you decide to save an edited bit, what you save is only pointers telling the program where on the sample to go. The original sample stays as it is, and is just referenced. This is good, in that it saves considerable disc space (a segment only takes up about 174 bytes even if the sample is 10Mb), but irritating when you actually want to slash things out of the original to save more space. The

blank, silent portion before the first beat comes in stays with you forever.

In order to define a segment, you place markers on the wave form of the sample which appears in the edit box. Clicking on the left mouse button sets a marker, and you can widen it by pressing the Shift key and dragging the mouse around. Unfortunately, if you happen to click the mouse again (by accident), the markers vanish. There were a few occasions where I was standing around doing Harry Enfield "I don't think you wanted to do that" impersonations whilst The Manager was screaming "I was pressing the Shift key! I was!". I hope this will be updated so that the left click will set a marker if there are no markers already on the screen, and the right button will remove markers when you're finished with them.

Please Q Here

Once you've defined the segments and saved them, you can then move on to what turned out to be a very powerful tool, the cue sheet. It didn't sound impressive on paper: all you do is name the segments you want in a list, and they're played sequentially. When we got to using it, though, we were able to do some complex things, rearranging the song, adding an extra long middle section, replacing one fairly dull piece with a more interesting segment. If the cue sheet, you define whatever segments you want to in whatever order you want, then press play. The cue sheet is again a series of pointers rather than a sample, so takes up very little space. In our case, we had a cue sheet taking up around 300 bytes and had over 2 minutes of music coming through from our 40 second sample. Admittedly it wasn't a particularly interesting 2 minutes, but it gets the idea across.

Some of the segments weren't quite in sync when played back with others, so we went back and re-edited them, saved them, and played the cue sheet again without updating it. It worked fine, using the newly edited files. Impressive stuff.

Two two's are four...

We moved on to the main package, 4T/FX. We were expecting this to be rather more complex, but it isn't. It's very straightforward. You just select which inputs you want to use to record, then do it.

At present, you can record to tracks 1 and 2, then transfer the files to tracks 3 and 4, then get back to recording on 1 and 2 again (but see Quality and Quantity for ways around this). And if 4 tracks aren't enough for you, you can bounce down without losing quality. If you find out that there's a small section of one track which

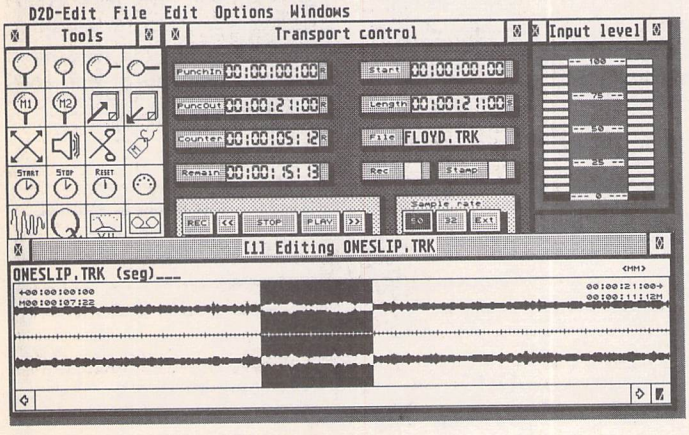


Figure 3

Markers can be set whilst the music is playing just by pressing the Space bar.

you've ever used a MIDI recorder, you'll get the general idea. Any song consists of repeated segments. You just play it once to your satisfaction and then get it running through different parts of the song however often you want. This is the same sort of thing. With needs re-recording, you can arrange to punch in at that point, as you can with Edit.

You can also add effects. There's a library of effects which come with the disc, but I'm told that this will be increasing, in fact already has since the manual was written. Each effect has certain parameters, up to four of them, which can be adjusted on the spot to vary things so that, for instance, the digital delay has a longer gap between echoes. Each track can send various portions of signal to the effect and receive differing returns. The output of each track can also be varied by changing its destination, making track 1 go equally between outputs 1, 2, 3 and 4 whilst ensuring track 2 only makes its way to output 3. It's sort of mixing, but herein come some real problems.

Disc Jockey

The samples that are played by the Falcon are stored on disc. It has a DSP to take care of handling all of them so that the sound is good and doesn't suffer from glitches, leaving the main processor pretty much free to do what it

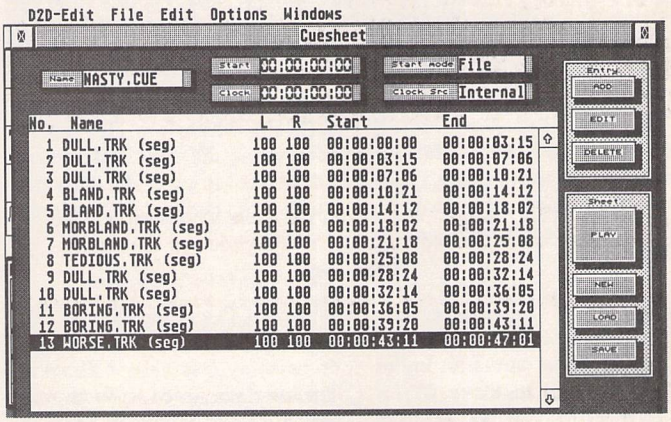


Figure 4

It doesn't matter how bad the music is, the cue sheet will keep playing it as often as you ask it to.

likes, except that what it has to do is pull huge amounts of data from the disc and send it off to the DSP. This means it has little time left for such niceties as keeping track of the mouse and updating the screen. One of the first places you notice this is on the clock, counting away where you are on the recording in hours, minutes, seconds and frames (25 of them to a second by default). It doesn't run smoothly, occasionally going off in little leaps and bounds to catch up with the time the processor's spent on disc access. And the faders don't work properly when you're recording or playing back. This is stated in the manual, so shouldn't come as a surprise, but it does limit the amount of on-the-run mixing you can do. It does make the punch in option close to essential, though, when you want to re-record any sections whilst leaving the rest intact.

More Words with the Editor

Unlike with Edit, there's no editing. Pretty obvious really, I suppose, but it seems silly to have two separate programs to do the one job, especially when they don't like to talk to each other. Edit does have the facility for converting two 4T/FX tracks into one Edit track, and vice versa, but 4T/FX doesn't. And even Edit won't convert a cue sheet file into something that 4T/FX can use, a real shame.

While we're on the "get at D2D" tack, let's nip back to the editing option on Edit, where you can set a marker, then drag it as far as you like to show a marked area. As long as it's not past the edge of the window. As soon as you hit that, that's it. What would be much better would be that if you reach the edge and keep pulling, the area that the window is focused on moves with you, like in the higher class (and enormously more expensive) Mac software. The windows redraws are very slow, as if it has to re-load the file instead of just accessing the nearest portion of it from memory. (You are using all available memory, aren't you?)

Now or later?

While The Manager was playing, he managed to find a few rather minor bugs in the system. These have been reported to D2D. Their response has been ... unusual. If there's a fault, the software will be upgraded, but you won't have to pay a penny for it. The upgrade will be sent out to the shops, and if you take your original disc in to

them, they'll upgrade it for you. No worries about waiting for the final fix. Use it now and if you find a fault, it'll be fixed for nowt. This is a nice attitude. It takes away the worry of whether you should buy this version or wait for the next one, since you'll always have the latest version available to you as long as you have the master disc.

This approach is only for faults, however, not actual upgrades. D2D have an official policy of not producing upgrades, just new products. Except...

The previous version of 4T/FX didn't have the punch in facility, making it far less usable. They weren't satisfied with that, so they've changed it, and now it does. And if you've got the early version, go to your shop and get the new one. It's that simple. And, not content to leave it there...

An upgrade actually under consideration is to make 4T/FX C-Lab compatible. At the moment, it can be used as an accessory and run with Cubase V3 and above, so all your MIDI gear can be recorded onto disc, while you record the vocals in sync, or you can have 4 different vocal tracks and keep the MIDI on the Cubase file. It will soon have the C-Lab equivalent of this.

Another change being looked into that won't be so much an upgrade as a different product is to go for the full 8 tracks. That you'll have to pay for, but it's still a way off at the moment.

The Manager's Verdict

To be honest, it didn't make him jump up and down palpitating and dribbling with excitement saying "I've got to buy a Falcon now!". For one thing, it was Sunday, so no-where was open. For another, it took him some years to switch from a sequencer to an ST. But he also had some very valid arguments. The software's in a Catch 22 situation: if it gets accepted, then walking out of a studio with a bundle of discs will enable you to walk into another with the same bundle and finish off some work, but until it's accepted, that won't be looked on as a good way of storing what you've done, so fewer people will settle for it, so it won't be acceptable. That doesn't kill it, it just makes for a harder struggle in the professional studio market. As we know from what happened with Steinberg, though, it can be that the professional studios have to change to keep up with us.

There were a few occasions when I was standing around doing Harry Enfield impersonations - "You didn't want to do that, did you? I don't think you really wanted to do that!" - while the Manager was screaming, "I was pressing the Shift key! I was!"

He did think it was good, but then started comparing it to Mac software, which is a little unfair considering the price differential. But at least it got as far as good, which, from him, is quite a recommendation.

The Amateur's Verdict

Generally, I've got to say that this is a nice piece of software. But I do have my reservations about it. The interface needs to be improved (in 4T/FX, you press Enter to start playing, in the edit window, you press Help, on the cue sheet, you press the play button, then get asked if you're really sure you want to carry on) and 4T/FX should not include Edit as an add-on program, but rather should contain its own version so that all four tracks can be edited.

I was surprised and pleased at how useful the Edit program was, allowing you to re-structure your song in lots of different ways without ever losing the original or the quality. If only it was completely integrated with 4T/FX, I think I'd give this a definite recommendation. As it is, I'll say that it's good, reasonably priced and allows some real quality to be put into demo's that would otherwise rely on home taping. And it's here, now. Go into a shop and try it out, it's well worth a look.

Quality and Quantity

What I heard at D2D was good. When I got to the studio, though, we were able to do a direct comparison through the desk of what was going in and what was coming out. The Manager was able to point out that there's a slight loss of treble and a boost and muddying of the bass. He was also of the opinion that the reason for this is Atari's cut- back on the quality of the D/A, A/D convertors, the things that turn a digital signal to an analogue one and back again. This is *not* a problem with D2D, it's just that their software is good enough to be able to bring to the fore this failing.

Adding to the quality problem, the Falcon's design of a stereo mike input means that it's limited to two simultaneous tracks input. D2D are working on solutions to the Falcon's limitations. These include 4I/4O, a £299 audio hardware expander which will give 4 separate inputs and outputs, bypassing the Falcon's D/A convertors, so you will be able to record 4 tracks simultaneously with an improved sound quality. And, there'll be digital inputs and sampling rate settings so you can record from DAT or CD directly without the sound having to be translated to the audio realm at any point. A cut-down version of this, SPDIO, with just 2 inputs and the digital interface will be available for £199.

Counting the Cost

Direct to disc recording is far more expensive than the price of 4T/FX suggests. You'll need an enormous hard disc (I'd recommend going for at least 1Gigabyte, which will set you back around £1300) with fast SCSI II interface to give the processor more time to concentrate on the screen; a device for backing it up (tape streamer, magneto optical disc, mini-disc when Sony bring it out); D2D's add-ons for better quality input and output and to give you access to all the tracks, but you'd need these kind of things whatever PC you decided to use for such a project, and with them you'd need to add a DSP. Although it works well on a mono monitor, a VGA monitor is recommended when you use 4T/FX, since that gives a red light warning when one of the tracks is in record mode. It's very irritating when you've recorded something, then press play to listen to it without taking the track out of record. Having an actual record button would be a relief. It will work on an ordinary colour monitor, but only in flicker mode.

You'd also benefit from a processor and memory upgrade (32MHz, 32Mb £599 from Gasteiner) so that there's more time to keep track of the screen to allow for mixing. Overall, quite a high price. Except that it would cost you around the same to get hold of the multi-track digital tape standards. They, admittedly, have 8 tracks, but far less editing flexibility. And the Falcon also has 8 tracks to work with. D2D are working on ADAT Edit which will allow you to digitally transfer tracks from the Alesis digital 8 track recorder to the Falcon so that you can edit them as you wish, then send them back to the ADAT once it's been arranged to your satisfaction. The hardware/software combination will cost you around £799.

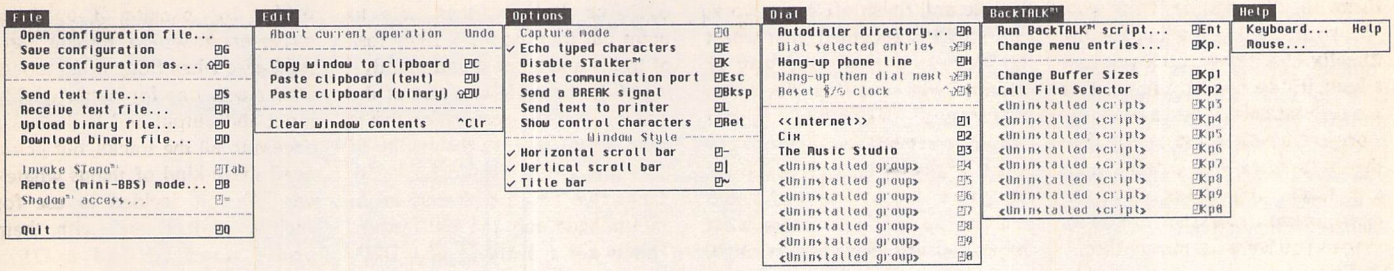
Product:..... D2D-Edit - Stereo Direct to Disc Recording/Editing software
Price:..... £150

Product:..... 4T/FX - 4-Track Recording software
Price:..... £299 inc. D2D-Edit

Product:..... SPDIO - Digital interface for D2D-Edit
Price:..... £199

Product:..... 4I/4O 4 input/output + digital interface
Price:..... £299

Supplier:..... D2D Systems Ltd. St. John's Innovation Centre, Cowley Rd, Cambridge CB4 4WS.
Tel:..... 0223 421107



STalker

Review by Graeme Rutt

Communications terminals for the Atari are legion - from the now ancient and awful KComm to the new and excellent Connect - but most offerings have been either shareware or even public domain. Why this is true is not difficult to pin down - the Atari market is small in comparison to others and the number of users interested in communications is only a tithe of that number. What place then for a commercial offering such as STalker? It has to offer superior facilities than its cheaper brethren, it has to be competitively priced and most of all it has to be entirely slick and professional in use.

I'll not hold you in suspense: STalker is all that and more - a feature-packed package which will certainly take a place on my desktop for years to come. It has an impressive pedigree too, written by Gribnif, the authors of Neodesk, and sold in the UK by Compo the vendors of more excellent packages than I could click a mouse at. When you combine this with the fact that Neal O'Nions - top man at Compo UK - gave the package his stamp of approval by taking on the UK licence after buying a copy for personal use, you get the idea that STalker is, indeed, something special.

Overview

Like most good software packages STalker is fully GEM'd but unlike most it runs as either a program or a desktop accessory. And uniquely, when run in the latter mode STalker can run as a background task, even on my humble 8MHz Mega ST - more of this later. Being GEM'd STalker takes advantage of all the normal windows, drop-down menus and even GDOS. Using mono-spaced GDOS fonts for terminal output is an excellent method of improving the display and will become very useful when MultiTos rears its head - a time when we'll all be wanting to make our windows smaller without losing information.

So, what do you get when you open your lean, mean blue and white STalker package? Simple, a disk, a manual running to 134 pages and a warranty card. The disk includes a registration program, an installation program, the STalker program files and also a few PD extras. The manual has no tutorial but the Introduction to Telecommunications with STalker section is detailed and well written. The reference section is also good, covering all of the options available in the program. Over two-thirds of the manual is taken up with a description of STalker's script language BackTALK. And the warranty card? Well, that's a mini-personality profile - but what did you expect?

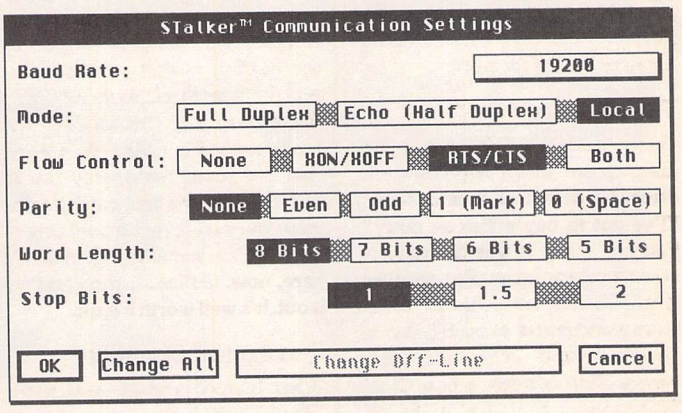
Installation

Getting STalker up and running is not the easiest thing I'd ever done but is also far from the hardest. It's not made easier when you find out that changing the Current Service settings have no effect on the auto-dialler entry default settings. And some of the actual default settings are all but useless! I doubt, for instance, if many people have much use for a terminal boasting 7 bit words and 0 parity. Take my advice, create as many entries in the auto-dialler as you can think of, set up the Current Service settings as you want them and then Change All. Then all you'll have to do is modify those few niggly services who really do need their words 7 bits long.

There's another pitfall to beware of in the Global Settings section of the Settings menu. Make sure you up the size of the file transfer buffer as high as you can, because if STalker has to dump the contents of your downloaded file to disk every 4K then you will get errors. And that's on harddisk (on floppy it slows your file transfers down to a snail's pace) - definitely time to change your download directory to that handy ramdisk!

But hey, I'm being unfair here! Concentrating on the few niggles without praising the other features. Let it be stated here and now that STalker is one of the most configurable comms programs available. As expected every auto-dialler slot can have its own modem settings, preferred transfer protocol and terminal emulation. Unexpectedly each slot can also have its own GDOS font, auto-logon sequence and BackTALK script file. And there's no need to enter the auto-dialler every time you want to dial a service, just give it its own dialler number and the entry will appear on a drop-down menu ready to dial with a single click.

The Global Settings are also a powerhouse of useful features.



~ Figure 1 ~

Comms Settings: local mode is useful for testing scripts.

From the predictable function keys to the mind-blowing array of communications ports it's possible to send and receive data through. Have you heard of the Beckemeyer MT C-Shell? Well if you have then STalker allows you to use it as a communications port – whatever it might be!

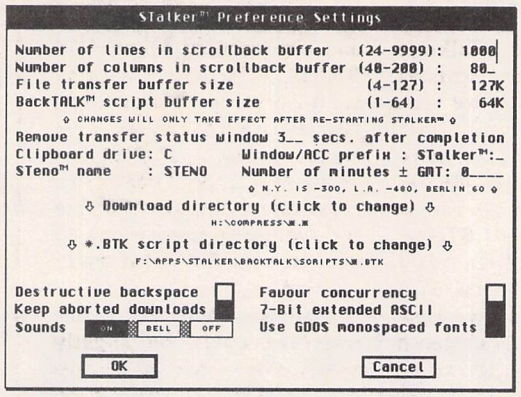
Online

Enough installation! How does STalker work in the low-down dirty world of computer communications? Well, very well in fact. The auto-dialler auto-dials, the auto-logon guides you past the morass of 'information' screens and bulletins and a clock at the top of the window tells you how much time/money you've just spent. The text scrolls up the screen effortlessly and quickly and the emulations (VT52, VT100 and ANSI) work very well. I gave the latter the acid test – a full screen ANSI editor generated from a IBM PC bulletin board – and everything worked perfectly.

File transfers, including an automated Zmodem, went ahead without a hitch – at least after I'd changed the size of my transfer buffer. And come across at a respectable speed for a fairly slow data transfer rate between my machine and modem of 19.2Kbaud. I had no problems at all with the online aspects of STalker – as with all good software if you have a good set-up you get good performance.

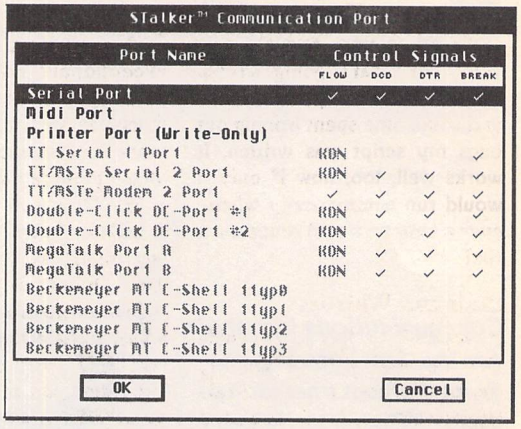
Accessory

An aspect of STalker that always seems to crop up in any discussion of the package is its ability to run as either a program or desktop accessory. Or – more correctly – its ability to run entirely in the background. This, to the uninitiated, means that STalker could log into a bulletin board, run a script and download pre-chosen files while you get on with other work.



~ Figure 2 ~

Preference Settings: be sure to up your transfer buffer size!



~ Figure 3 ~

Comms Ports: look at the choice!

Powerful yes; perfect no. I've tested this feature to destruction on my terribly slow 8Mhz Mega ST and can report that this feature is useful but also has some problems. Most of these problems centre around background file transfers – this is not entirely unexpected since these are notoriously processor hungry. A specific set of GEM events – moving or resizing a window, accessing the file-selector, using drop-down menus, etc., cause the file transfer to pause. This almost always results in a Bad CRC error and often causes the transfer to abort. The problem makes background transfers all but useless at 14.4 Kbaud, dodgy but bearable at 9600 baud and almost perfect at 2400 baud.

The speed of transfer is effected badly by running another program over STalker – I'd expect nothing less. But the good news is that the problems gradually go away as you use a faster and faster machine. On a 16Mhz ST and a Falcon 9600 baud becomes usable – on an even faster platform (a 32Mhz Falcon, anyone?) the situation should become even better.

BackTALK!

Another unusual feature of STalker is its script language, BackTALK. Unlike most script languages available on the ST this is not far off being a complete language. It's compiled, based on C, and has a whole host of features which can control every aspect of STalker. The compiler takes plain ASCII files and generates .BTK files.

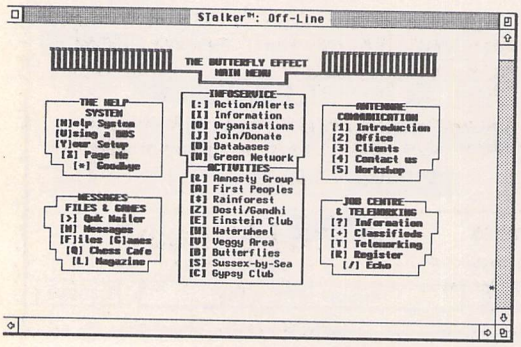
These mini-programs can be run in a variety of ways: you can run them by clicking on Run BackTALK Script, you can attach them to auto-dialler entries, they can be assigned to function keys and your most useful scripts – your BackTALK top ten – can be installed as part of the BackTALK drop-down menu. I'd love to see another option – the ability to run a script when a specific string is sent to you via the serial port. Imagine the power! It would be possible to write your own auto-Zmodem program that put different file extensions into different folders. You would be able to write automatic mail grabbers on multi-user systems – like CIX – which told you when you had new mail. The flexibility would be frightening!

Enough! Flight of fancy over. How well does BackTALK work? In practice, compiling and running the supplied scripts goes ahead as planned. But, of course, they were supplied by the programmers and I wouldn't expect problems. So, to really put it through its paces, I decided to write my own script. One that would – as described above – download a file using the Zmodem protocol and put files with .GIF extensions into my pictures folder, put .QWK files into my off-line reader folder and everything else into my normal download file folder.

Writing the script presented a problem – learning the BackTALK language. I'm an assembler-head by trade and high level languages leave me cold – I've a copy of Lattice 5.52 in the shelf to my right and that's where it's stayed since an aborted foray into the arcane world of C. But reviewers should be doers, so I donned my programming head and got stuck in.

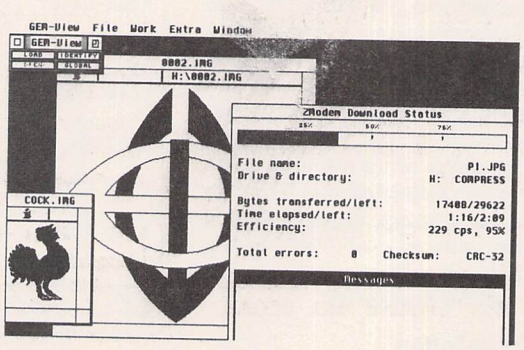
The section of the manual dealing with BackTALK is long, detailed and excellent. There's a tutorial for both beginners and advanced users, a reference section and a number of appendices. I found it easy to understand and soon got about the task of writing my script – the motto here is that if you've programmed anything before you've got a head-start but don't be put off if you haven't. There are plenty of example scripts to play with, and who knows – it might even be a gateway for someone into programming proper.

At compile time any syntax errors in the script are shown up and it's time to go back and correct. However, program errors are much harder to track down.



~ Figure 4 ~

STalker Online: emulating ANSI.



~ Figure 5 ~

STalker Online: while I dislay pictures in GEMView.

There's no debugging program available so the only recourse is to re-check your text file and work out what's going wrong. So, with a little perseverance and some time spent ironing out bugs my script was written. It works well, too, now if only it would run automatically whenever a bulletin board sends me a file!

Bells and Whistles

It wouldn't be fair to conclude this review without quickly mentioning one or two of STalker's extra special features. Firstly, there is the support for another of Gribnif's programs; STeno. This is a text editor that runs as a desk accessory - if together with STalker then STeno can be used as the former's text capture buffer and can also be used to pipe text back into a bulletin board. There is also a remote function, which acts like a cut-down bulletin board to allow you - or anyone else who knows the password - to call your system and transfer files.

Also, owing to STalker's exceptional communications port support it is possible - on machines such as the TT with more than one serial port - to be online to more than one place at a time. Or you could be online to a bulletin board while STalker was acting as a bulletin board itself. Or even on a humble ST it would be possible to be online whilst transferring files through the MIDI ports to any second computer you might have. The possibilities, while not being endless, are certainly abundant.

Conclusion

All round an excellent product with very little to be said against it. STalker performs any communications task with aplomb and has enough specialist features it well worth considering. The GEM interface makes it easy to learn and despite the odd problem even a novice user should be online quickly without too much fuss. The manual is well written, laid out intelligently and the section devoted to BackTALK should make learning the language if not easy then bearable. BackTALK itself is the best script language for comms on the Atari range of computers. Although not everyone has a use for a script language, if you do then be sure that it has every function you'll require.

Criticisms? Not many - the interface could be slightly slicker, there could be support for more transfer protocols and it would be nice if all dialogue boxes were in windows. My biggest disappointment is that STalker doesn't allow you to auto-learn scripts - but that's really no big deal.

If you need an excellent, cost effective comms terminal which works faultlessly and has enough features to keep even expert comms hackers happy then buy STalker.

Product:	STalker
From:	Compo Software Ltd., 7 Vinegar Hill, Alconbury Weston, Huntingdon PE17 5JA
Tel:	0480 891819
Fax:	0480 891171
Cost:	£39.95
System:	Full GEM Support; Runs as .ACC or .PRG; Full background operation; VT52, VT100, ANSI emulation; ASCII, XModem, XModem 1K, YModem, YModem-G, ZModem & CIS B-Plus; file transfer protocols; GDOS support for screen fonts; Supports the GEM clipboard; Supports all ST, STe, TT, Falcon, Midi, Gadgets, Double Click and Beckemeyer communications ports.

Imagecopy 2

Image utility for Atari ST/TT/Falcon computers

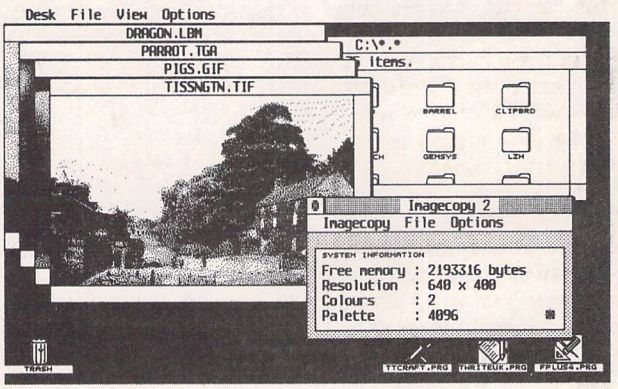
Copy images from screen in any ST/TT/Falcon video mode. Images can be copied by pressing Alt-Help, and a flexible rubber-banding system allows images to be selected with a fine degree of accuracy.

Display images in any ST/TT/Falcon video mode. Colour-mapping and dithering is used to display images in video modes which contain fewer colours. Several images may be displayed simultaneously in GEM-window or full-screen display modes.

Print images and screen dumps in black and white or colour on a wide range of printers, including 9-pin and 24-pin dot-matrix printers, Bubblejet printers, Deskjet, and Laserjet printers. Imagecopy 2 offers print-scaling, variable-sized halftones (up to 16x16) for realistic colour depth, and comprehensive colour controls, and is able to print images containing up to sixteen million different colours (24-bit true-colour). Print-colour options include: monochrome, CMY colour, CMYK colour, CMY separation, and CMYK separation. Colour separation modes can be used to print full-colour images on a monochrome printer.

Convert images between different formats (see next paragraph).

Extensive range of image formats: Imagecopy reads the following formats: TIFF, Targa, IMG, extended IMG, DEGAS,



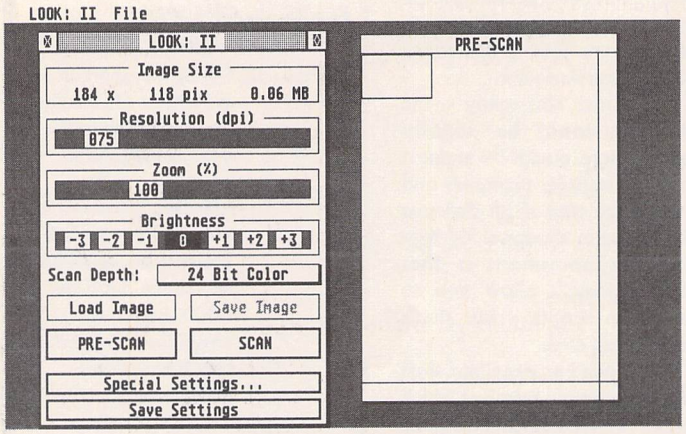
Neochrome, Art Director, Tiny, GIF, Spectrum, IFF/Deluxe Paint, Windows bitmap, OS/2 bitmap, PC Paintbrush (PCX), and Macpaint. Images can be saved in the following formats: TIFF, Targa, extended IMG, DEGAS, and RSC. TIFF support includes baseline TIFF apart from Huffman compression (uncommon), common extensions such as LZW compression, and the ability to read non-standard TIFF images produced by ST programs such as Retouche. The ability to print TIFF files allows Imagecopy 2 to be used as a print program with True Paint.

User-friendly GEM interface, including window menu bar, pop-up menus, colour sliders. Can be used as an accessory or stand-alone program.

Price - £19.95
Upgrades: from Imagecopy v1 - £10.00; from Imagecopy Colour - £5.00.
Return master disk only.

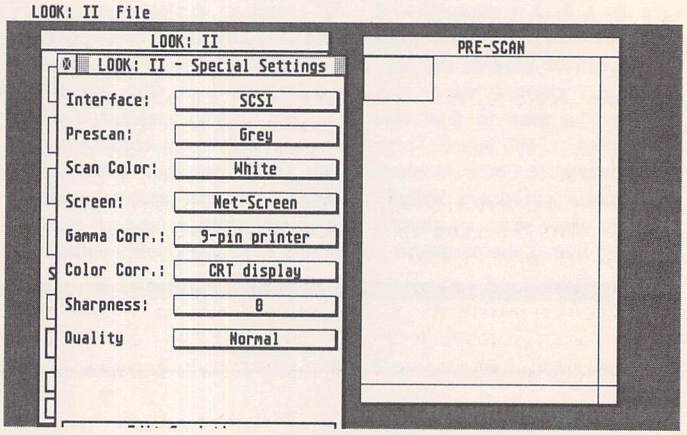
The ST Club
2 Broadway
Nottingham
NG1 1PS
Phone (0602) 410241

GT6500 Colour Scanner



△ Fig. 1: The main workscreen with the Prescan Window on the right and the main toolbox on the left. From here you can customise the software to suit the system you are using and the image you want to scan.

Until recently, full colour scanning wasn't readily available to the vast majority of Atari owners and we've had to look on enviously at PC owners who have had a number of hardware options open to them. Fortunately, this situation has changed and with the Epson scanners, the GT 6500 and GT 8000, we too can capture and reproduce images in glorious technicolour. Review by Keith Quinn.



△ Fig. 2: LOOK's Special Settings dialogue box. This allows you to fine-tune the performance of both hardware and software. Fortunately, the manual gives some initial hints and tips on how to use this!

It's often said that any piece of hardware is only as good as the software available to use with it. Scanners are no exception, and so I'll also offer my views on Digital Arts' LOOK, the software supplied by CGS as part of their all inclusive package.

System Requirements

- ST/TT computer
- Hard disk - the bigger the better
- Lots of memory!

The Hardware

Although a compact unit (333mm x 568mm x 125mm), the first thing to strike you about the Epson is the amount of deskspace required to accommodate it. Its sleek rectangular box design gives the unit the impression of being quite small. However, it covers almost as much area as the LaserJet on my desktop. So if space is a premium, this may not be the scanner for you and you may want to consider waiting for one of the colour handhelds currently available for the PC to become available for the ST/TT.

On the positive side, what you lose in deskspace is more than made up for in quality of image. Handheld scanners have always suffered from the high risk of image distortion caused by hand shake during the scanning process, something you don't have to worry about with a flatbed.

Setting it up

There are two options available for connecting the GT6500 to your computer. If you own an ST or STE the scanner connection is made via a modified parallel cable. The modification involves a cable branching of the parallel cable and plugging in to one of the MIDI ports of the computer. So if you regularily use a printer and any MIDI equipment, this is going to mean a lot of cable switching if you want to use the scanner.

For TT/Falcon owners life is a bit easier as the scanner can be connected to your machine via the built-in SCSI interface.

I have tested the GT6500 using both of the methods above to connect it to my TT. Each worked effectively, though obviously the SCSI connection increased the operating speed of the scanner. The documentation supplied with the unit says that the factory-set SCSI ID number should not need to be altered. However, I found that I did have to change this as I had some problems getting the scanner to work properly with the factory preset ID.

All of the essential controls for the scanner are located at the front of the unit, though the only control you'll use regularly is the ON/OFF switch as all of the other functions are controlled via the software supplied. However, if you want to print directly from the scanner, using it as a photocopier, you will need to study the handbook closely and familiarise yourself with the commands accessible form the scanner's control panel.

So, having got the thing connected, what's it like to use?

Through the looking glass

As I said above, all of the scanner's functions can be accessed through 'LOOK', the software provided by CGS as part of the package. Installing the software is simplicity itself - accomplished by dragging the files from the floppy on to your chosen partition on your hard disk.

The first time you run the programme, you'll be presented with a dialogue box asking you to indicate the type of interface used to connect the scanner to your computer. Once this has been done you're presented with LOOK's main workscreen (fig.1).

If you're used to working with GEM windows, this programme won't present any problems for you. The "controls" are located on the window on the left of the screen, pre-scans are displayed in the window on the right and final scans themselves appear in their own windows in the resolution chosen (e.g. mono, 256 greys or 24-bit colour).

In order to get the best out of the scanner you'll need to tinker with some of the special settings accessed through a button on the main control window (fig.2). The variables here will allow you to customise the software's operation to best suit your hardware set-up. I found that I had to try various combinations over a period of time to really get the best possible results from the scanner. You'll also have to alter some of these settings depending on the material you have chosen to scan - scanning line art requires very different settings in the screening option (fig.2) from that required when scanning in colour.

When scanning, the package is quick and easy to use: if you can use a photocopier, you can use this. Simply place the photo, etc., on the document glass, close the

lid and click on Prescan. Once complete, a representation of the image will appear in the Prescan window. Next, 'rubberband' the area you wish to scan and click on Scan. The resulting image is presented in its own window from which you can save it out to disk.

The file formats available to you are a bit limited: the Didot/Retouche compatible TIC (which produced excellent printed results), TIH and TIM formats are supported along with TIFF v5.0, TGA and IMG. Its worth noting the version of the TIFF format supported is very specific and LOOK refused to import other versions of this file format. Therefore you would be unable to use the software as a means of file translation. Granted this isn't one of its intended uses, but many ST/TT owners use similar pieces of software to do this.

Conclusion

Overall, this is a very impressive package. With Scanning up to 600dpi in full 24-bit colour, the hardware is as good as anything currently on the market. As I said earlier, a piece of hardware is only as good as the software which allows you to use it. Unfortunately, it's in this department that the package is a bit lacking.

Although it is perfectly adequate and efficient in scanning images, when it's compared with software bundled free with PC scanners you become acutely aware of a few limitations, notably the inability to zoom in on Prescans to allow you to be very accurate in selecting the area you wish to scan. However, this is eclipsed by the lack of a 256-colour scan option. All PC scanner/software packages I have seen have offered this option. Why settle for anything less than full 24-bit colour? Simple: file size. 24-bit scans produce enormous files - an image roughly 2" x 2" scanned at 300dpi in 24-bit colour can produce a file approaching 3.5 megabytes in size: not very portable! A 256-colour scan option would make this unit much more usable, making it much easier to transfer files between machines.

With regard to file formats, in my view there are some glaring omissions such as GIF and IFF, which, given their popularity as graphics file formats, you might have expected to find supported by this package. However, given the specifications of these file formats, their absence is attributable to the lack of a 256-colour option discussed above.

Despite these minor irritations, I would thoroughly recommend the Epson GT6500 to anyone involved in high quality graphics work or DTP.

Conclusions

Points for:

- ✓ Easy to use
- ✓ Excellent results
- ✓ Competitive price

Point against:

- ✘ No 256-colour scanning option
- ✘ Limited File Formats
- ✘ No Prescan Zoom

Alternatives:

None at present, though the imminent releases of Chagrall and Cranach Studio will offer software alternatives as well as extending the choice of hardware available to Atari users.

DETAILS

Product:.....Epson GT6500 & 'Look' driver software
Version:.....1.0
Publisher:.....Digital Arts
Distributor:.....CGS Computerbild, 19 Ledbury Pl. Croydon Surrey
Tel:.....081 686 8121
Price:.....£1016.38 (inc. VAT); SCSI interface £35.25 extra
Manifest:.....Software on one double-sided disk with an 8-page manual.
System:.....Any ST/TT/Falcon with at least one megabyte of memory. For full 24-bit colour work, a hard disk is essential as is a larger memory capacity.

DIY Hard Drives

Graham Curtis

I have owned a 1040STF since September 1987 when the price dropped to £499. For many years, I hankered after a hard disk to speed up Timeworks DTP and the extremely tedious job of compiling Pascal programs to floppy disk. I remember vividly the article in ST World on building a drive. Unfortunately, the economics did not look good, especially if one took the risk factor into account.

After years of struggling with floppies and various RAM disks I took the plunge and bought a 40 Meg Power Computing 'Power Drive Slimline' at the Computer Shopper Show. What a revelation! For the first few days at least, things were looking really good. But wasn't it slowing down as I filled it up? My machine was still on TOS 1.09 and was struggling with all those lovely files and directories. I installed TOS 1.4 and things improved no end.

Despite being reviewed as being a little bit 'naff' because of lack of through port or DMA setting switch, the Power drive is all one could wish for if your only need is a hard disk. The ICD disk utilities are excellent and inspire great confidence - so easy to set the disk up just the way you want it. The only 'minus' was the funny Amiga power supply to power the beast. The man from Power said it was the most economical (cheapest!) way of providing 12- and 5-volt in the right amounts.

After the honeymoon period was over, curiosity overtook me and I just had to have a look inside. How do they get it all into a box not much bigger than a second disk drive? Well, the power supply is external so that helps a lot and removes the need for a fan. Take one 1" high NEC SCSI drive, add an adSCSI micro host adaptor, a switch and two LED's and the job's done. Brilliant really.

Having been impressed with the simplicity of this system, compared with the Heath Robinson effort described (admittedly several years ago) in ST World, I felt motivated to 'have a go' just for the fun of it.

I rescued a 'scrap' Conner SCSI drive which had allegedly failed some time earlier, and connected it into the Power Computing box for a trial run. The ICD software came up trumps and identified the drive (which I couldn't as there were no understandable markings on it) as a Conner CP340 of 40 Megs. The drive formatted with no bad sectors which was a surprise. It was also considerably quieter that the NEC drive in my 'Slimline'. In order to build a system, all I needed now was a host adaptor, a power supply and a box.

The adSCSI Micro host adaptor came from Power Computing for £69.95. I chose this because it was the cheapest one they did and assumed it was the same one as in the Power Slimline. The Astec power supply was from J & N Bull @ £10-ish and the box was one that I had lying around. Inadvertently, I had built a mistake into my plan just to make life more interesting. The adSCSI micro is intended for internal fitting in a Mega ST and is supplied with a few bits that you don't need and lacks some of those that you do for an external system. This meant that I had a host adaptor with a 24-way ribbon cable connection and a computer with a 19 way 'D' connector on the back and nothing to plug into it!

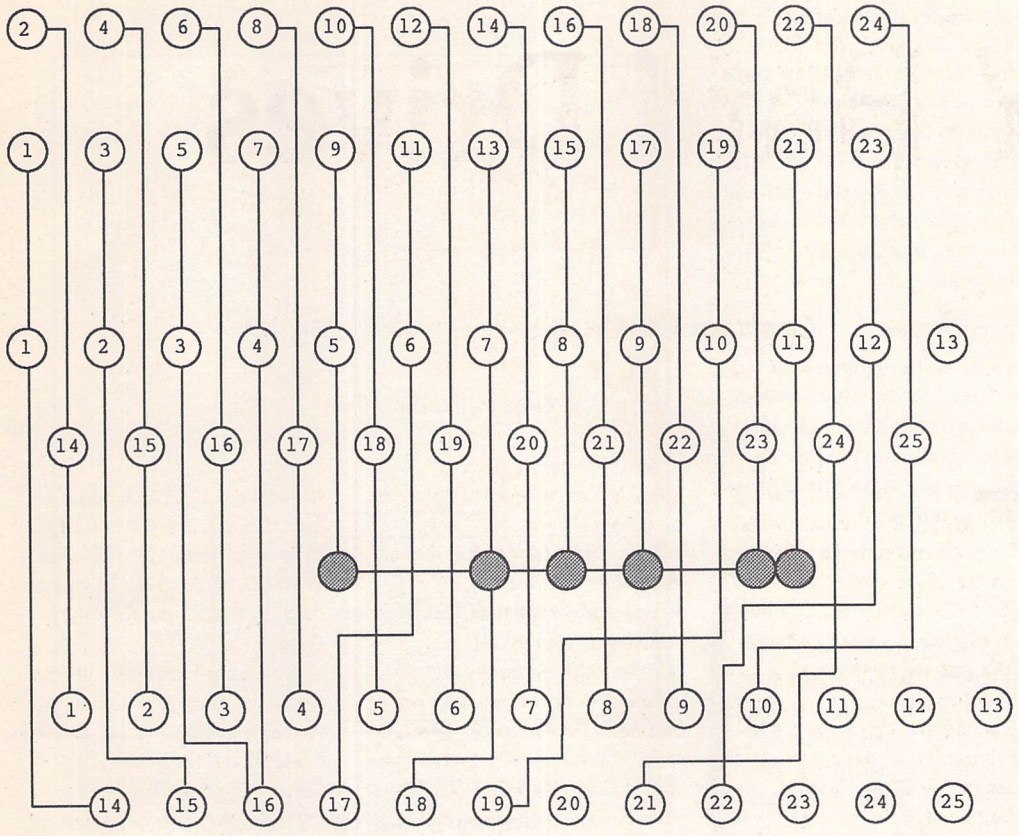
Not to be outdone, and refusing to spend my way out of this hole, I constructed, with the help of the PD cable and the ST manual, a cable which would connect the host adaptor to the ST. Being unable to find a 19-way connector, I made one from a 25 way item with 6 pins and part of the case removed. Surprisingly this all worked first time (almost).

I built this drive just to satisfy an urge. It took a couple of days of sweat where I thought I had thrown money away, but the result was very satisfying. A friend has been using it for a while now with no problems whatsoever.

In just the same way that you start looking for a new one as soon as you have got your house decorated the way you want it, I began to feel that my entirely adequate ST system was due for a replacement! Should I go mad and get a TT? Is the Falcon really going to be readily available soon? What about one of those Mega STE's that have flopped? In the end, my budget and fears of incompatibility made up my mind. My shiny new Mega STE came from Gasteiner Technologies with 2MB of RAM and a 47MB hard drive. This was the most I could afford even though I would have preferred more memory and disk space. It really is a nice machine. The keyboard is a great improvement. There are more serial ports than I can find a use for and the VME bus opens up lots of possibilities. It's a pity they didn't keep the analogue joysticks of the STE. They can be put to good use for other things!

The Atari hard drive utilities really are poor if you want to do anything unusual, which of course I did! I have been using Cumana's OS9 68000 multi-tasking operating system with my 1040. ICD's superb software allows you to set up 'special' partitions very easily. I couldn't understand a word of the Atari version! I read the ICD manual. Their software would unfortunately only work if an ICD host adaptor was in the system. Good job I hadn't sold the other drive yet! After a bit of jiggling with the jumpers on the Mega's host adaptor (the 'micro' hasn't any) I had the internal drive at DMA 1 and the external one at DMA 0. This meant that the computer would only boot off the external drive, but at least I was able to use the ICD software again and get on with things. This was OK for a while but I hankered after my original objective of a 'nice self-contained unit'. Unfortunately I had got used to the 90-odd megs of disk space rather than the 50 that I had started with. In a fit of over confidence, I realised the answer! Buy a bigger drive and an ICD Micro host adaptor for the Mega STE and sell the surplus parts. Seemed simple enough, didn't it ?

I advertised the Power drive and the Mega internal drive in ST Applications, then set about planning my 'new' system. After my good experience with the



△ Connections for ICD adSCSI Micro to standard Atari STF DMA Socket

24-way plug (top) is connected to 25-way 'D' (middle) with 24-way ribbon cable. The 25-way 'D' is wired to a second 25-way 'D' (bottom) or a 19-way 'D' with screened multi-core cable.

If a 25-way is used, pins 11, 12, 13, 23, 24, 25 and part of the shell must be removed so that the connector can fit over the standard 19-way socket.

'dead' Conner drive I decided to go for a Conner CP30080E 85 Meg SCSI from Dabs Press for £202 inc VAT. Within a couple of days the new drive arrived. I connected it to the external micro host adaptor (the new one hadn't arrived yet) but there was no response. I connected it to the internal Atari adaptor, and again nothing. I changed the jumper settings; still nothing. I then listened carefully to the drive and found that the motor was failing to spin up properly. At least I had found why it didn't work.

Dabs Press kindly agreed to replace the drive for a new one and I thought my problems were over. I rang Gasteiner to find out where my host adaptor had got to. "It will be another three weeks." Funny really, after being told they were on the shelf at the time of ordering. Must be a really high shelf. I cancelled the order and rang Atari Workshop about the new ICD 'PRO' software that had been given a mention in one of the comics. This software allows you to use the ICD utilities on 'foreign' host adaptors. After ringing on Tuesday afternoon, the packet dropped through the letter box at 7am on Wednesday. Things were beginning to look up. The software really did its job and came with Cleanup ST plus drivers for floptical and CD ROM drives. I now had a system which would work without an additional drive for 'life-support'.

With misplaced optimism I carefully parcelled up the Power drive and sent it off to its new owner in Wales. After a couple of weeks my 'new' Conner drive arrived. Enthusiastically, I connected up drive number two. Again nothing! Oh dear! I spoke to the ever-helpful Paul Rossiter. He patiently explained about the Quantum ELS drives which have parity permanently enabled. Older drives, it appears, have a switch to disable parity. Many modern ones don't bother and just leave parity on all the time.

In the meantime, a phone call from Wales reveals that the Power Slimline has had a fatal accident in the post. Things can only get better!

I rang the ICD bulletin board system in the USA. They suggested that I disable parity on the Conner and check the SCSI TERMPWR line on pin 26 of the connector from the drive. The ICD Micro host adaptor draws its power from this line and some drives do not supply it. Mine read 4.68 volts. Was this enough? Yes, 4.68 volts is OK. The Seagate ST157N in the Mega gives 4.66. What now? I couldn't see any way of disabling parity on the CP30080E. I didn't even know for certain that my Conner drive was in good working order.

The helpful men at ICD suggested that I contact Conner to find out whether the drive has 'parity enabled' and whether it can be changed. A helpful John Cambell rang from Conner in Irvine to say that YES the drive did have parity enabled and NO it could not be disabled. He promised to send installation details for their drives.

Apparently, it is only the Micro host adaptor and Atari's own in the Mega STE that do not support drives with parity enabled, so I gave up the fight and ordered an ICD advantage host adaptor from Atari Workshop to see if I could sort the situation and get an 85 meg drive up and running.

The story has now come to a (sort of) conclusion. I got my ICD Advantage host adaptor this morning. I connected it all up to the Mega in a rat's nest of wires on top of my desk and guess what? It worked! The software recognised the drive as a Conner CP30080E and ICD's ratehd program gave it a trasfer rate of 840k per second. The drive is very quiet and quick but what I really wanted was an internal drive. The advantage host adaptor isn't really suitable for this, unless I can produce another one of my reverse-engineered DMA cables. It will have to live in its own box for now.

In Conclusion

Fiddling around with hard drives and adaptors can, at best, be highly satisfying but, as we all know, it can be costly and frustrating too! I will try and summarise some of the lessons that I have learned over the past months.

The ICD adSCSI Micro host adaptor is designed to fit inside a Mega ST computer. The kit comes with software, a bracket for mounting the drive, a power connector to pick up power from the Mega and a DMA cable. The DMA cable is a ribbon cable to connect to the Megas INTERNAL 24-way DMA connector. The micro host adaptor does NOT support drives with parity, so a drive which allows parity to be disabled is a must. DMA address

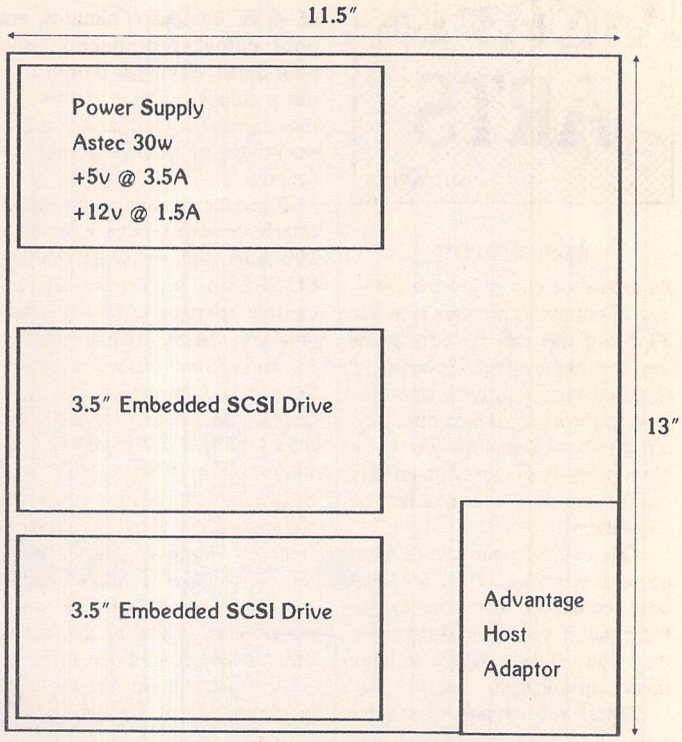
is not selectable. The adaptor draws its power from pin 26 of the SCSI connector on the disk drive. This is called the TERMPWR line and is intended for 'active' SCSI cable terminators.

The Mega STE uses an Atari host adaptor which does not support drives with parity and mates with a socket (probably the same as the original Mega) inside the computer. The adaptor does not support drives with parity enabled.

For mounting in a separate box, ICD make two host adaptors, the Advantage and Advantage+ (which comes with a clock). Both of these adaptors support drives with parity enabled. The kit comes with software, an external DMA cable and a power supply cable for tapping its 5v supply from the standard hard drive power connector. The interface is fitted with two 19-way DMA sockets. One for in, one for out to other peripherals.

Hard Drives

Because of the requirements mentioned above, it is wise when buying a hard drive to find out whether parity can be disabled easily (usually with a simple jumper or switch setting).



△ Arrangement of 3.5″ SCSI drives. PSU and ICD Host adaptor in typical steel box.

BELOW are the interconnections between the 24-way and 20-way connectors (both on the ICD adSCSI Micro board) and their connection to the ST's DMA socket. An *italicised* line shows the ground connections. Depending on which connectors you can get, it may be necessary to connect either of the two connectors on the board to the 19-way D. DMA cnnectors (19-way) and other Atari-specific connectors can now be obtained from Maplin Electronics.

24-Way AdSCI	20-Way AdSCSI	19-Way DMA
1	*2/10/6/14*	-
2	1	1
3	4	12
4	3	2
5	*2/10/6/14*	*13/15/11*
6	5	3
7	*2/10/6/14*	*13/15/11*
8	7	4
9	*2/10/6/14*	*13/15/11*
10	9	5
11	8	14
12	11	6
13	*2/10/6/14*	*13/15/11*
14	13	7
15	*2/10/6/14*	*13/15/11*
16	15	8
17	*2/10/6/14*	*13/15/11*
18	17	9
19	12	16
20	*2/10/6/14*	*13/15/11*
21	*2/10/6/14*	*13/15/11*
22	16	18
23	18	19
24	19	10

The drives that I know of which *cannot* have parity disabled are:

Most modern Conner drives. i.e. CP30080E CP30170E. Quantum ELS series.

Drives where parity *can* be disabled:

* Conner CP340 42 Meg
* Quantum Prodrive Series.
* Quantum LPS Series.
* NEC 3835 42 Meg
* Seagate ST157N 47 Meg

Suppliers

If you want to have a go at building a drive I have found some useful addresses:

Gasteiner Technologies

Unit 2
Millmead Business Centre
Millmead Road
London N17 9QU
Tel: 081 365 1151

~ Drives, Host Adaptors, cases, Power supplies. In fact, everything you could want, if you want to do it the easy way!

J&N Bull

250 Portland Road
Hove
Sussex BN3 5QT
Tel: 0273 203500

~ All sorts of electrical bits, but most useful are the power supply units. Often a little old fashioned but usually very cheap. A 30-watt Astec PSU can be had for less than £10.

J.A. Crew

Watery Gate Farm
Dovers Hill Road
Weston-Sub-Edge
Chipping Campden
Gloucestershire GL55 6QU
Tel: 0836 841979

~ As above - they used to do some rather nice sturdy boxes. More cheap power supplies.

Have fun!

GRAFIX ARTS

Paul Keller

Hardcopy

As artists we can enjoy the creation of computer pictures with our ST's and this can be both great fun and challenging. However, a slight problem can arise when we wish to show our friends our latest ST graphical creations, the problem being that our computer and colour monitor are needed to show them!

This is fine if your friends have come to visit you, as you will have your computer and monitor to hand, but if you are visiting them then you will be unlikely to have this set up with you.

There are, however, several possible solutions to the problems of showing a hardcopy of your computer pictures without the need to carry the computer and monitor around with you. These in order of preference are:- (1) screen shot photography, (2) colour printer dumps such as by the colour DeskJet printer 550c, (3) video recordings.

(1) Screen shot photographs

The most versatile way I find of showing my own ST computer pictures to other people is by the use of photography, and with this hardcopy method you can carry about computer pictures in your pocket! It is a method best suited for use with 6 or more pictures, as anything less makes this method a little expensive. It can be time consuming as you have to meticulously set up your camera gear for each session.

To achieve the best photographic results you will need a good 35mm camera, a tripod and a cable release mechanism. If you are new to photography you will also need plenty of patience, as first results might not be as good as your computer pictures seen on screen.

A good flat screen colour monitor such as 'Philips' is preferable for obtaining the best picture results. A TV does not offer very good reproduction as there is so much interference by way of picture movement. Results can be obtained from an ordinary TV but for the most part they are not generally good enough for professional use. Other problems of taking screen shots from the TV of your computer pictures are poor colour reproduction and poor detail. Having determined to use a colour monitor and having the camera accessories mentioned, set up your equipment as follows:

Place the camera on the tripod, attach the cable release, insert a 100 ASA film, either KODAK or FUJU 24 or 36 pictures. Set the camera aperture to f8 - this will give you the optimum resolution for most 35mm cameras. Camera time should be set to 1 second; bear in mind that any speed faster than 1/15th of a second will possibly result in inferior results such as banding and blank or distorted pictures. Distancing the camera from the monitor is very important. As a guide fill the computer screen area which is the inner border area to that of the border of your camera view screen.

Any pictures need to be taken in darkness, and for best results with no flash, just the light from the monitor picture being used. This will make sure no reflections occur on the glass of your monitor and therefore stop the potential spoiling OF your picture. Finally keep a record of the brightness and contrast levels of your monitor as well as any camera settings you may make different to those mentioned here. The monitor brightness is very important and it may take some experimentation before you get the optimum levels of brightness and contrast for your particular monitor. As a guide don't have the filiments too bright and mark the dials with a felt pen so that you have a visible guide as to your particular settings.

(2) Colour print dumps

The most convenient hardcopy method for colourful computer pictures is a Colour DeskJet printer such as the Hewlett Packard 550C (this has been reviewed in a past STA issue). At a cost in the region of £500 it might be too expensive an option for the hobbist user. But for the professional who needs a copy quickly such as for a magazine deadline it is unbeatable. The quality of a photograph can be superior to a colour printer dump, but this will depend on the expertise of the photographer.

A small PD programme called HPChrome is needed to obtain the best results from this printer and also works with the Deskjet 500C and Deskjet 500. Colour dot matrix printers aren't anywhere near as good and the lighter colours such as yellow quickly get dirty, degrading the final picture output. Most printers will produce acceptable results in black and white and this can be the quickest and cheapest way of displaying your pictures as a visual guide to any finished productions.

(3) Video Recordings

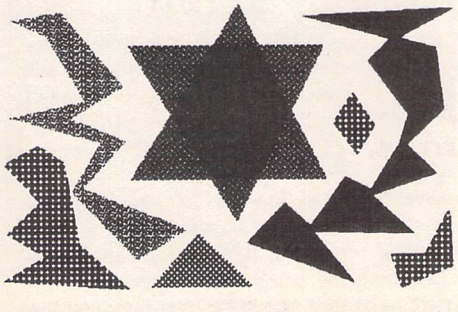
Using a video recorder is fairly easy, although it will depend on what video recorder connections you have. The modulator can be plugged straight into an aerial input socket on your video recorder, if it has one. A genlock with phono sockets can be made to create a better picture or if you have a BNC connector on your video use a phono to BNC converter plug. The quality of a VHS recording is not as good as the picture quality you get on a monitor, and as such it is not always the best way to show computer pictures. It is, however, an excellent way of showing computer movies. Packages such as 'Art Director' and 'Cyber Paint' are best suited for video reproduction. 2-cell and 3D movies can be created with Cyber Paint and a long playing time can be obtained if you use this package with a video.

A video tape can be useful when wanting to show some instructional information or as an advertising ploy. With most homes having a video you need only carry a tape with you if visiting friends.

Polygons

This tool is found in all good graphics programmes such as 'Canvas', 'Degas' etc. It can have many uses, some of which are linear and others solid formations. It is useful as a guiding tool and also for any special shapes which need drawing such as stars. At its most basic it is a three sided triangle. It is a versatile tool when utilized properly for any linear work such as technical drawings. The polygon command is easier to work with when used with a gridlock command. This enables accurate angles of shapes like stars and triangles to be copied in mirror fashion. Another advantage is that it is faster to use such a method as the gridlock for positioning of polygon shapes. Filled polygons are created in the same way as linear except that filled would be selected as well as the desired pattern before starting work on such a polygon. The polygon is filled when the starting point is joined with the finishing point.

The polygon tool is good for use with large areas such as sky or silhouette buildings. Any irregular polygon shape which contains a single colour fill is suited to the polygon command and use of it can help speed up work especially when using it as a rough guide to any picture outlines. If your art package supports shadow then it should be possible to draw shadowed polygons. This is useful for the drawing of bomb bursts. In outline mode polygon works the same as similar drawing tools such as box and when finally connected up it is not filled but remains as an outlined pattern or shape. The outline of the polygon can be changed by changing the line fill mode: this can be useful when only creating pictures in black and white. With different line fill patterns it is easy to distinguish polygon boundaries - especially useful if you want more than one type of polygon or for use with some technical drawings.



LAST WORDS

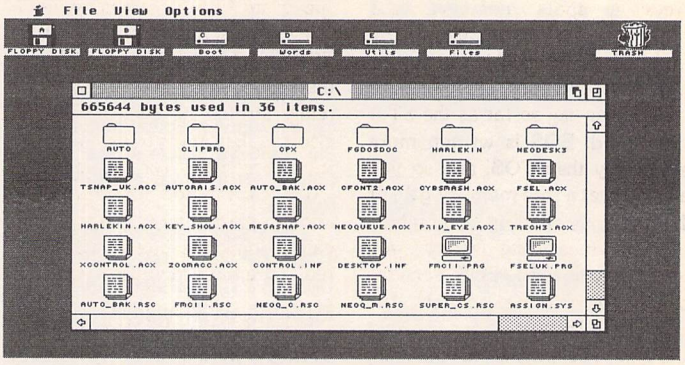
"The divine is everywhere, even in a grain of sand"

Casper David Friedrich

◁ Some different shapes created with the polygon command, showing the polygon's versatility.

Enhanced Operating System

A Review by Bob Osola



△ This is the EOS desktop. Apart from the new icons, it is very similar in use to TOS 1.4. The accessory symbol and new screen font are features of NVDI.

Fed up with a load of old TOS? Try EOS to perk up your old ST.

These are times of hard choices for ST upgraders. As little as a year ago, serious users had a fairly clear upgrade path. If we chose not to buy a whole new machine, we could at least obtain go-faster goodies to give our existing computer new zest. However, the advent of the Falcon, cheap 486s and even affordable Macs must make even the most die-hard ST fan think twice before pouring more money into a machine with a finite future. So then, if you are waiting to see which way the wind blows before committing serious money, how about spending a modest sum to improve the last years of your ST? An operating system upgrade coupled with a good screen accelerator will give really noticeable performance improvement for relatively little outlay.

OS Blues

Why go for an after-market OS when you can get a genuine Atari version? Answer: because EOS (Enhanced Operating System) is faster and is reputed to have fewer bugs. Atari have improved TOS greatly over the last few years but have managed to introduce new problems with each release. TOS fixes abound for all sorts of applications - some software must be run using an AUTO folder fix for different TOS versions; other software falls over at each new TOS release (notably STOS and a lot of PD efforts). So how much confidence can we have that Atari have finally got it right with TOS 2.06, the latest and possibly last single-tasking OS? Not a lot, if past performance is anything to go by. In its favour, TOS 2.06 is marketed as a switchable option upgrade, which demonstrates a common sense approach to as yet undiscovered nasties. Just don't expect everything you have to run without problems.

The improvements in TOS 2.06 over earlier versions owe much to successful after-market custom desktops such as NeoDesk, which have helped make the ST a flexible and really useful tool. However, according to System Solutions (who will happily sell you either TOS 2.06 or EOS and therefore have no axe to grind) TOS 2.06 is no faster than TOS 1.4. Its main advantages are: commonly-used applications can be stored on the desktop with custom icons; windows smaller than the full screen can be arranged to show all items in a vertical scroll only (rather than the incredibly annoying horizontal and vertical scroll of old); all files in a window may be selected by a single click; programmes may be launched from F keys and files can be actioned (printed or loaded into a programme) by dragging them onto the appropriate icon. Other minor niggles have also been addressed; selected files stay selected if the window is scrolled, for example. These new facilities may suffice for the single application user - however users with many different applications (or customise, hack and fiddle merchants such as myself) will still need the much greater selection of facilities on offer in NeoDesk.

EOS

EOS started life in Germany under the somewhat unfortunate name of KAOS. You can still see the latter name in use for a PD desktop replacement programme, a commercial version of which was sold in Germany to complement the KAOS operating system. EOS appears to have been developed initially for the MEGA ST range then adapted for other STs. It is basically a re-worked, speeded up TOS 1.4 with bugs removed and features added. EOS can be used without any of the TOS 1.4 bug fix AUTO programmes. Its only known incompatibility to date is with Cubase, a package famously sensitive to any change in the status quo. EOS was originally sold by System Solutions as a component part of their highly desirable but very expensive hardware accelerator packages. It is now available separately as an operating system upgrade. The choice of whether to go for disk or chip version depends on how much money you want to spend - the chip version is more expensive but is less trouble to live with. Both versions are supplied with a hard disk boot delay utility, a boot parameter utility and a utility for configuring extra memory, but these only work on MEGA STs. A configuration desk accessory allows you to fine tune the system - grow and shrink boxes can be disallowed and menus made to be pull-down rather than drop-down, for example. Other than this accessory, EOS has few frills; not even a manual as yet, though this has been promised for a while. In fairness though, if you can use your TOS facilities, you will have no problems with EOS. System Solutions will in any event provide phone help for anyone with difficulties.

Chip EOS

EOS comes on six chips. You can fit these yourself if you are are competent to do so. I found out the hard way that "competent" means skilled at fitting chips and clearing jumpers rather than just being able to solder... I decided to save the fitting charge and carriage costs which proved to be a costly mistake. I will draw a discrete veil over the skin-burningly embarrassing mess I made of DIY installation; suffice it to say that it cost me much more than fitting and carriage to rectify. The fitting instructions are fairly clear - you will have to make or unmake a couple of jumper connections depending on your model. Be warned - this is not a plug in and go upgrade. A substantial amount of de-soldering was required on my STFM to clear the holes of four of the previously unused sockets. If you have the slightest doubts about your ability to do this kind of thing, then cough up the extra for a professional fitting job. The chip option is the same price as TOS 2.06. A more expensive option is a switchable set, which is a chip set with both TOS 1.4 and EOS fitted - this is a good option for TOS 1.2 owners to enable the utmost in compatibility.

Disk EOS

EOS on disk sits in the root directory of your boot disk/partition. It is kicked into life by a boot programme which should be the first item in your AUTO folder. This brings up a selection screen which allows you to either boot normally with EOS, boot so that EOS remains memory-resident after a warm boot or not boot EOS at all. These options seem pointless to me; if you don't want EOS taking charge, why install it? Floppy users can simply use another boot disk if they don't want EOS installed. Hard drive users will already have SuperBoot or similar installed before anything else as lock-out protection - this can be used to by-pass EOS if need be.

You may be worried here about encroachment into your valuable RAM, but in fact EOS

frees up spare memory. Your operating system is loaded into RAM when the machine boots – it could be stored on a chip, a disk or in a carrier bag so far as the ST is concerned. EOS is written more efficiently than TOS, and so you actually get a free memory gain of 10-18K depending on which memory-measuring utility you use. Once loaded, EOS versions on disk or chip are identical. The chip version is more robust though. Too much adventurism with reset-proof RAMdisks or overloading the machine with AUTO programmes and kamikaze desk accessories tends to cause disk EOS to fall over more often than did my old TOS 1.2, which was slow but fairly stable. Oddly enough, disk EOS very occasionally bombs out to a German boot selection screen. A cold boot clears this away.

Living with EOS

The EOS desktop looks much the same as the TOS 1.4, except that it uses its own icons for drives, files, folders and programmes. In addition, there is a new gadget box at the top right corner for sending the front window to the back. The menu choices are broadly the same, with the exception of the disk formatting options which include support for high density floppy drives. Older TOS users will appreciate the inclusion of the TOS 1.4 file move feature (Ctrl+drag). Also, a warm boot can be initiated by the old IBM three-fingered salute (Ctrl Alt Delete). EOS has none of the whistles and bells of TOS 2.06, but the heavy user is likely to use it with NeoDesk anyway, so the absence of such functions is really no loss. Where EOS scores is in speed. Dialogue boxes and window operation are much faster. Disk access and file operations are greatly speeded up. TOS 1.2 users in particular will see a marked improvement here. All file manipulation (copy/write/delete) exercises are noticeably faster. This makes for much easier hard disk maintenance. Backups can be done much faster, for example, and are therefore less likely to be put off.

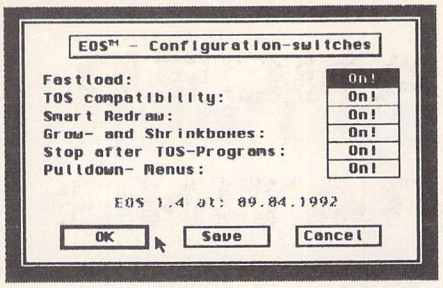
Where EOS scores even higher is when an accelerator is fitted. NVDI, the software accelerator programme, was developed so as to be optimised with KAOS (EOS). This means that while NVDI will greatly speed up certain parts of TOS, it will speed up EOS even more. BELA Computer, the suppliers of NVDI, claim that NVDI speeds up AES functions by 503% using EOS as against 268% using TOS 1.4. My test results confirm that EOS lets any accelerator really stretch its legs. Quick ST also supplies much improved performance when run under EOS. Users of macros inside applications, particularly macros that call up dialogue boxes, will see a really dramatic increase in speed.

Nothing But The Truth

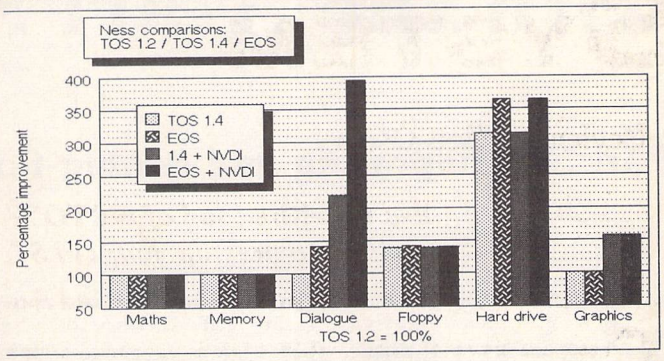
Trying to obtain hard facts among a sea of variables is not easy. I have a preference for the Ness benchtest programme because it is one of the few to give the actual time in seconds of the test runs. My Ness results were converted to percentage performance increases by simply dividing the time taken for TOS 1.2 to complete a test (as measured before upgrading) by the time taken for 1.4 and EOS to complete the same tests after the upgrade. The performance increases are therefore relative only to my particular machine – a standard 8 Mhz STFM with 2MB RAM, SM144 mono monitor and Power Computing 900E hard drive. Screen size, disk fragmentation, component tolerances and a host of other factors make absolute statements about performance increases impossible.

A comparison of TOS 1.4 and EOS using the popular Quick Index programme has also been included. This gives results in percentage improvement based on some mysterious internal standard which results in suspiciously large performance increases. Hence a direct comparison against TOS 1.2 using real times was not possible. The massive improvement in the string test with NVDI installed rather overshadows the very real improvements of over twenty percent for string and dialogue speed without an accelerator added.

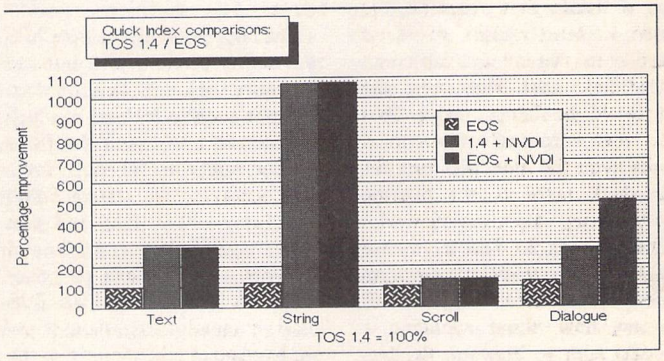
Both programmes showed TOS 1.4 to be closer to EOS in performance than I thought would be the case. This may be because performance improvements are perceived by a subjective human user as being greater than their quantifiable value. The other possibility is that the test programmes do not fully probe the range of improvements. Such programmes differ so widely in their results as to make the independent observer doubt the veracity of their conclusions. I was similarly surprised that the addition of an accelerator only showed up really large improvements in dialogue boxes. The seat-of-pants reaction is that the improvements are more widely spread than that. EOS seems to really take off with a software accelerator fitted.



◁ A Desk Accessory is provided to enable fine tuning of the desktop. The TOS compatibility switch has not been necessary to date.



△ The Ness result times have been converted to percentage improvement format so that the times for TOS 1.2 represent 100% on all tests. These are actual measured improvements obtained by comparing before and after test times.



△ Quick Index returns percentage improvement by default. As this improvement is measured against an internal standard rather than a before and after comparison of test times, the results are an indication of improved areas rather than absolute improvement on an individual machine.

Summary

Both TOS 1.4 and EOS are streets ahead of TOS 1.2 in terms of all-round performance. EOS is better than TOS 1.4, but not by such a large margin. The addition of an accelerator improves EOS more than TOS. Such a combination provides really noticeable improvement for any early model ST. Power users can buy NVDI and EOS on disk for around the same price as TOS 2.06. This combination, if used with a PD desktop replacement such as KAOSdesk or Teradesk will give a much faster and more powerful operating and file management system than TOS 2.06. Alternatively, EOS on chip can be purchased for the same sort of outlay. Certainly, any existing NeoDesk user should consider EOS as a natural speed complement to a powerful desktop.

Product:.....EOS
Supplier:.....System Solutions, Windsor Business Centre, Building 2, Vansittart Estate, Vansittart Rd, Windsor SL4 1SE.
Tel:.....0753 832212
Fax:.....0753 830344
Price:.....£39.95 on disk
£69.95 6-chip set
£99.95 plus switchable TOS 1.4
Fitting & carriage:
£10 & £20 app.
Alternatives:.....TOS 2.06 at £69.95
System:.....STFM, Mega ST

Desktop Publishing with the Atari ST

Part Six: Importing and editing text

Günter Minnerup

Desktop publishing may be a graphics-intensive application but simple text is still its lifeblood. Without words there would be no publishing since the purpose of the exercise is to communicate meaning to others. But where do these words come from, and how do you enter them most efficiently onto the page? With very short texts, the obvious answer is to enter them straight from the keyboard, but do that with anything beyond a a couple of paragraphs or so and the sluggish screen updates will soon become tedious. For magazine and book work, the text is therefore usually imported from a wordprocessor file.

The wordprocessor – the desktop publisher's best friend

Every desktop publishing system therefore needs a wordprocessor as an indispensable companion program, and your choice of wordprocessor as well as your ability to get the most out of it can make as much difference to the quality and efficiency of your DTP work as the choice of page layout software. The distinction between desktop publishing and wordprocessing has recently been blurred by the emergence of so-called "document processors". These are fine for people who have no DTP ambitions but wish to incorporate different fonts and the odd graphic – a business logo, perhaps, or a technical illustration – into their work. The best companion for a fully-fledged DTP system, however, remains a plain, character-based textcruncher which does not have its own fonts and graphics handling to get in the way of speedy and efficient text manipulation.

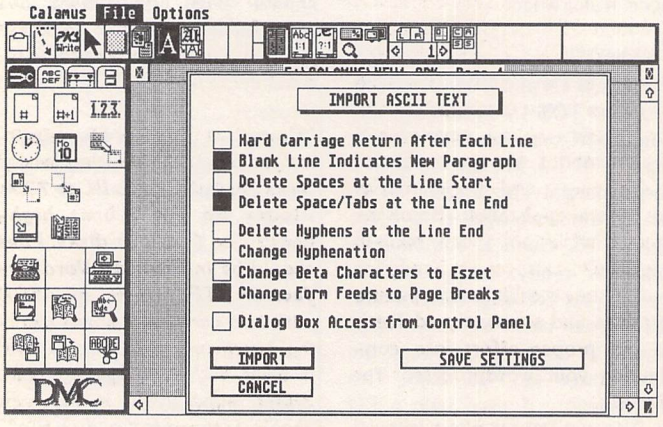
Protext is ideal for this sort of work as it eschews all such frills in favour of maximum speed, power and flexibility. As it also runs on the PC, Amiga, Archimedes and the still incredibly popular Amstrad PCWs – as well as the new Amstrad portable notebook – you have a strong chance of getting all regular contributors to your publishing venture to standardise on one single wordprocessor. Whichever program you intend to use, however, check that it offers the following essential features:

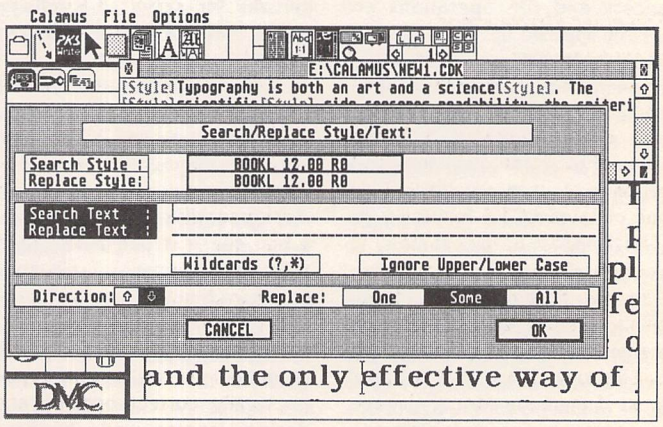
1. Search-and-replace:

Many editing operations are repetitive to the point of tedium. For example, if your house style prescribes single quotation marks and a contributor insists on using double quotes, you will be spending hours correcting this in a long manuscript. On top of this, you should not only replace the double with the single quotes but introduce typographically correct opening and closing quotes at the same time. A powerful search-and-replace facility must be capable of being instructed – preferably in one operation – to replace all wrong quotation marks with the correct ones, then every second occurrence with the closing quote, finally all remaining ones with the opening quote. There are plenty of other uses for this feature: eliminating superfluous spaces introduced by poor typists, replacing hyphens with proper dashes, removing unwanted tabs and paragraph returns, expanding abbreviations, and so on.

2. Handling unprintable control characters:

The correct quotation marks and dashes mentioned above, along with foreign accents and special characters such as bullets, are represented by ASCII values outside the usual range and many wordprocessors cannot search for and replace these. The same applies to certain formatting instructions (superscript/subscript, font changes, letterspacing etc) which DTP programs insert into their files and which you may well wish to enter or edit in the wordprocessor. Check therefore that the wordprocessor you intend to use has the ability to make full use of the entire 8-bit ASCII set in all its operations.





Calamus SL offers the most flexible import options for different types of ASCII files and can also read First Word Plus and Word Perfect documents. Its built-in PKS Write editor is almost a fully-fledged wordprocessor, but I still prefer to use Protext to prepare my text files as far as possible before entering Calamus.

3. The ability to handle unlimited line lengths:

Many wordprocessors impose a limit – usually of 255 characters – on the line length. For export to a DTP package, however, you want ASCII files without any linefeed/carriage return (LC/CR) formatting except at paragraph ends – this means that each paragraph effectively constitutes a line and such lines will obviously tend to exceed 255 characters in length.

4. A good spellchecker:

While some DTP software includes a spellchecker, these are invariably too slow for serious use so once again it is preferable to stick to the wordprocessor. The obvious use for a spellchecker is the elimination of typos and poor orthography, but they are also essential for imposing uniformity and consistency as prescribed by your house style (US or UK spelling, "-ize" or "-ise", abbreviations, etc.). The ideal spellchecker is not just fast, but allows you to create customised dictionaries reflecting the specialised vocabulary of your publication and its house style, which may well be different from your normal correspondence style.

5. Macros:

Many of the typical editing and file conversion operations described in this article will have to be applied again and again, so a macro feature is absolutely essential. Ideally, macros should be definable in two ways: by simply "recording" an operation when it is carried out for the first time, then writing it to disk for future repetition, and by "programming", i.e. modifying or refining an existing macro by editing its commands.

From wordprocessor to page layout

All DTP packages have their own internal text file format and the indispensable first step to solving many of the common import problems is to have a good look at one of these (.CTX for Calamus, .TXT for FSP 3, for example) in your preferred wordprocessor. All sorts of weird and wonderful characters will appear alongside the actual text and you will soon be able to work out what these do: most of them are control character sequences for bold, italic, superscript, subscript, font changes and so on. How useful this information is depends on the ability of your wordprocessor to enter and display the full 8-bit set of ASCII characters. Once you have worked out what these characters mean, the task is to replace the control character sequences used by the wordprocessor with their equivalents used by the desktop publishing software.

A typical sequence of operations, from receipt of a contributor's disk file to its import into the DTP software, will therefore go like this:

- if your ST won't read the disk it is probably either in Macintosh or PC high-density format, so have it converted to double-density PC format which the ST can handle. A high-density drive and/or Spectre GCR come in handy here, but all you really need is access to the same type of machine that the disk was created on. Take along a blank disk formatted on your ST to copy the file to.
- copy the file to your ST's hard disk. Now check the file format (if unknown) by loading it into your wordprocessor. If it appears with lots of garbage characters and you don't have a wordprocessor which can read, import or convert this file format, strip out all these characters and run the file through your spellchecker to produce a clean ASCII file. Always ask contributors to enclose a printout so you can check your disk file against that.
- Edit the text and insert bold, italics, superscripts and subscripts as required, using your wordprocessor's usual control codes.
- Run the macro which replaces all quotation marks with typographically correct opening and closing quotes, all hyphens enclosed in spaces with m-dashes, all hyphens at the beginning of paragraphs with bullets etc.
- Run the macro which replaces all your wordprocessor's formatting control codes with their equivalents as used by your DTP software. Switching to bold or italics will normally involve a font change, of course, so make sure your macro is correctly set up.
- Save the file as an ASCII file which contains LF/CR characters only at paragraph breaks. You are now ready to import this file into your DTP software.

Built-in text editors

Some DTP packages come with their own built-in text editors or editing modes, so why bother with a wordprocessor at all? The best of these is undoubtedly PKS Write, available separately for owners of Calamus 1.09 and built into the more recent Calamus S and SL. PKS Write offers most of the facilities of a general wordprocessor, is totally dedicated to Calamus and quite fast, but has a slightly clumsy user interface and some annoying bugs. There is even a spellchecker, as indeed there is in Fleet Street Publisher, but such DTP add-ons can never compete with the real thing for power and speed. One of the most important aspects of spellchecking is dictionary maintenance, and I just cannot see the point of maintaining parallel dictionaries for several applications. So on the whole, while any such built-in capabilities can come in handy for last-minute modifications, picture captions and so on, my advice is to put proper effort into configuring your wordprocessor for the task.

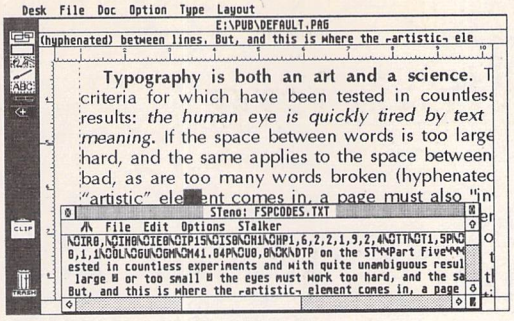
The text import filters offered by desktop publishers can also be safely ignored for most purposes. Most of them seem to know only two types of wordprocessor files, First Word Plus and Word Perfect, neither of which are recommended: First Word Plus because it is just too slow and under-featured for professional work, and Word Perfect because ST versions are too buggy and too far behind the PC versions. With a bit of effort and a wordprocessor like Protext, you can knock up your own import conversion macros anyway.

Style sheets

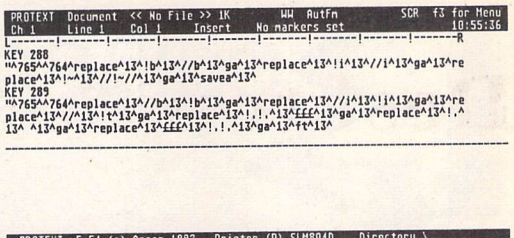
Much trouble and grief can be prevented by applying a bit of foresight and issuing all regular and casual contributors to your publication with a style sheet. Traditionally, these specify the stylistic conventions adopted by a publisher – US or UK spelling, format of footnotes and bibliographies, how to handle abbreviations, numbers, tables and quotes. Imposing such uniformity on contributors means that you can avoid the tedious chore of replacing single quotes with doubles, "color" with "colour" and "2 Meg" with "2Mb". But there is no reason why you should not extend this concept to minimise your computer-related problems, too. For example:

"Contributions should be submitted on 3.5 inch, double-density disks formatted on a PC to 720k. Please do not submit high-density or 5.25 inch disks. Files should be in Protext, WordPerfect or RTF format, or ASCII with two carriage returns marking paragraph ends. In all cases, a print-out showing any bold, italics, superscript or subscript should accompany the disk file."

Next month: Importing and editing graphics



FSP's info line (between the file name and the calibrated ruler) displays the text and any codes, here the characters used for opening and closing quotes.



A couple of examples of Protext macros, designed to convert text including Protext-format footnotes into a file that Fleet Street Publisher can handle. This necessitates the temporary replacement of Protext's code for bold and italic and saving the file as an ASCII file to disk, then reloading it, replacing the codes and converting the footnote numbers to superscript. The rest can be done by FSP's Protext import filter.

Beginners' Forum

Mark Baines

Boot Disks

When I first bought my Mega ST booting up the computer wasn't a problem. I switched it all on and waited for the GEM Desktop to appear. I quickly learnt that having a disk in the floppy drive speeded up the process enormously.

When I started buying programs and accumulating PD software it became obvious that I needed certain files or programs to be loaded when the computer booted up. There were two reasons for wanting these files; some were for my benefit and added extra features to the computer's operating system and others were required by TOS or the application I wanted to run.

These files fall into three categories:

1 Accessories
2 AUTO folder programs
3 TOS or application configuration files (DESKTOP.INF, NEWDESK.INF, ASSIGN.SYS, environment variables, etc.)

ACCs, AUTOs and INFs

Desktop accessories are placed on the disk in drive A in what is called the root directory, that is, not inside any folder. There is a limitation of 112 files in the root directory, enough for most purposes.

AUTO folder programs are placed within a folder called AUTO on the boot disk. At boot up only, TOS looks for such a folder and will load and run all the files it finds there with the .PRG file name extender. These programs are of two types. Some run, perform their tasks and then quit, usually without intervention from the user. They do not take up any memory. A good example of this sort is one that displays a picture at boot up or plays a sound file.

Other AUTO folder programs run but do not totally quit – they stay resident in memory and wait to be called again when the need arises. These are called Terminate and Stay Resident programs or TSRs. Again, they fall into two main types. Most will change some operating system variables or exception vectors which tell TOS where to look for the program in memory under certain circumstances. Examples of this type may be replacement file selectors, screen accelerators, TOS system patches and GDOS, etc. They are set up to divert TOS away from its own routines in ROM to the program's, effectively replacing TOS for those specific functions. The other type of TSR stays active all the time, taking up small amounts of the processor's time and continually performing a task. They include programs such as menu bar time displays and those that wait for specific key presses or other events to trigger them off. In practice, many TSRs use both methods of operation.

The decision to use the AUTO folder device when the ST's operating system was first designed was a simple yet brilliant idea. To this day, it remains light years ahead of what PC and other users have to contend with.

The third category of boot disk files are not programs but data files which either TOS, GEM, accessories or the AUTO folder programs need. Without a DESKTOP.INF (TOS 1) or NEWDESK.INF (TOS 2, 3 and 4) file in the root directory of the boot up disk, GEM will use the defaults, which are hard coded in the ROM, to set up the Desktop. The same goes for MultiTOS and its GEM.CNF and MINT.CNF files, GDOS's ASSIGN.SYS, FONTGDOS and FSMGDOS's EXTEND.SYS and the DESKICON.RSC file for TOS 2, 3 and 4. The XCONTROL panel accessory needs CONTROL.INF for its configuration data.

Now for the problems

So what do we have? A boot up disk rapidly filling up with all sorts of 'necessary' files that we quickly get attached to and can't live without. Problems now crop up which make booting up the computer more and more difficult and awkward. Most people soon obtain more than six essential accessories – which ones should be loaded up? What if the disk has no room left for any more programs? Should I load up GDOS and its related files and accessories if I'm not running any applications that need GDOS? Some AUTO folder programs are only necessary if running certain applications – the patch program that fixes the serial port bug is only any use if you are running a comms terminal program. Certainly, what you load up at switch-on has to be thought about seriously if only for memory reasons. Most accessories and AUTO folder programs also significantly slow down the processor. It is interesting to do some tests running the Quick Index program (ST Club PDC.75 or DMG.17) loading up each individual program in turn and seeing the result – the culminative effect can be dramatic. Not many people are aware of this or even think about it.

Most of you will also know that certain combinations of AUTO folder programs (rarely accessories) crash the computer at boot up or shortly afterwards. Many of these problems can be solved by changing the order in which these programs are run. TOS will load these programs in the order in which they appear on the disk, not the alphabetical order and certainly not according to the file's date stamp. TOS 2, 3 and 4 and most Desktop replacements such as NeoDesk will have a 'No Sort' menu option for a directory window which shows this physical order of files on the disk. The only way to alter this order is to copy the files to another disk, delete them on the original (this is most important) and then copy them back in another order – all very tiresome. There are some programs that can change the order for you. NeoDesk has a menu function to do this and AUTOSORT on DMG.27 or UTI.267 will also do the trick. As always, make a backup first!

The Desktop limit of six accessories has always been an annoyance and again, some programs will help you here, notably DC Stuffer (UTI.149 or UTI.306) and Chameleon (which I couldn't find in the catalogue). DC Stuffer effectively increases the limit of accessories but each one takes up more memory whilst Chameleon allows you to unload an accessory and replace it with another, which is what TOS should have done in the first place!

Clearly, there quickly comes a time when you can't load up everything you want. How do you solve the problem of trying to select which accessories and AUTO folder programs to run at boot up? One solution is to boot up, go to the Desktop and rename all the accessories you want with the .ACC file name extender and those you don't want with the .ACX extender. Similarly, the AUTO folder programs you don't want can be renamed to .PRX. Then you boot up again by resetting the computer and you should end up with the environment you want providing there are no clashes. This is slow, awkward and hard work. There must be a better way.

Boot up automation

As you suspected, there are some programs which will automate the above. One of the best and cheapest (it is shareware) is Superboot V8 on CMP.15. This comes in two parts, a configuration program run from the Desktop and two programs placed in the AUTO folder, one of which must be first, the other last. All your AUTO folder programs, accessories and data files are placed on the one boot up disk providing that there is room. (The Superboot configuration program can be made to take up less room by compacting it with a program packer such as ICE (UTI.232) and you can try formatting your disk to greater capacities.) When the computer boots up Superboot runs and allows you to select which accessories and AUTO folder programs you want, and in addition you can choose from a selection of DESKTOP.INF or NEWDESK.INF and ASSIGN.SYS files. This enables different DESKTOP.INF files for different resolutions or different ASSIGN.SYS files for different applications or application use. Other sets of configuration data files can also be chosen from so that certain applications or utilities

can have different default settings.

The Superboot configuration program enables you to set up thirty different default configurations so that all you have to do is press a Function key to get the environment you want at boot up. There are many other things Superboot is capable of. You can have your computer password protected, ask for the time and date, play sampled sounds, show a picture, set disk verify and key click and have a GEM program auto-booted after the AUTO folder and accessory programs have loaded. Don't be put off by all this: Superboot comes with excellent documents and is very easy to set up and experiment with. After a while you'll wonder how you ever coped without it and for those with hard disks, it (or a program like it) is an absolute necessity. See issue 5 page 30 for using Superboot with NeoDesk, issue 9 for a comparison of Superboot with XBoot, issue 13 for a small review of Superboot v7, and issue 15 for users of hard disks.

Application bootup disks

The alternative to having a single boot up disk and a program such as Superboot is to have separate boot up disks for each of your applications. This can be done in one of two ways depending on the available space on your application disks. You can copy only the AUTO folder programs and accessories you specifically need onto your application program disk and for most programs this will work. However, some applications barely have room for themselves let alone an additional ten or so programs. In these cases you can have a separate boot up disk specifically for that application. When your computer has booted up you then place the application disk into the drive and run your program. However, if you choose this approach you might as well go the whole hog and do what is suggested above with Superboot.

A boot-up disk for each application is neat especially if that application is auto-booted from the disk after the AUTO folder programs and accessories are loaded. However, you still have a problem if you need to change your AUTO programs or accessories because of any incompatibilities or if you want different configuration files for your application depending on what you propose to do. Again, a program like Superboot would be needed and so again, a separate boot up disk controlled by Superboot looks like the best system in the long run.

One last word of warning. Any disk left in the disk drive when you switch the computer on and off will eventually become corrupted. My Atari manual tells you to take the disk out of the drive before switching off. I have always attributed the cause of the damage to the small surges of power that goes through the system - including the drive's read/write head - when the power supply is switched on and off. Whatever the reason, do keep a backup of any boot up disks you make. If you suffer from this a lot, you can always put an old empty disk in the drive and switch on, then immediately replace it with your boot up disk and reset the system.

If you can think of anything that I ought to cover in this column then send me a letter, but please remember that I cannot deal with specific program and hardware problems unless it appears to be of common interest. Thank you for the letters received so far. Although I can't promise to respond to all personal queries, I'll do my best. An SAE certainly helps! You will also find me on the NeST, TurboNet and FidoNet BBS networks where this magazine is supported.

Mark S Baines
Beginners' Forum
Linnhe, Shore Street
Inver, by Tain
Ross-shire
IV20 1SF

EMail:
NeST 90:105/5 STA support in N.ST.MISC echo

FidoNet 2:259/29.10 STA support in ATARIST echo

TurboNet 100:106/0.10 STA support in T_ATARIS echo

DRAWING OUTLINE FONTS

3. Letterforms: Geometry & Art

Graham McMaster

The early typeface designers carved their letterforms in metal. Our tools are lines and Bézier curves and the manipulative facilities of graphics programs.

Tools

The early typeface designers (most existing typefaces were first cut between 1450 and 1550) carved their letterforms in relief on top of hard metal stalks. The resulting 'punches' were hammered into a softer metal, usually bronze, and molten lead was poured into the impression to form one copy of one letter. How fortunate we are to have font editors in which hammer and pliers are no more than icons representing some of the drawing resources of powerful graphics programs.

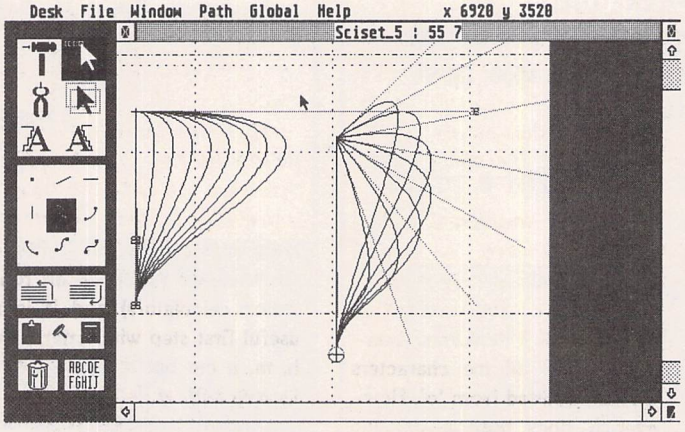
Our tools are lines and Bézier curves which are plotted with the mouse, coupled with the editor's ability to manipulate (i.e. translate, reflect, incline, expand... the list is almost endless) shapes formed from these basic elements. Of course, the greater sophistication and power of our tools carry an elevated expectation of geometrical fidelity and precision of form. Drawing your own typeface is still a major project but one which is well within the reach of all who are willing to master a basics graphics package.

Bézier Curves

The simplest way of becoming familiar with the tools of a font editor is to plot a few basic shapes and play around with them. Bézier curves, which are a powerful and flexible component of all vector graphics packages, have four elements: a start-point, an end-point and two control lines that are terminated by points which are selectable with the mouse. These control lines which are tangent to the curve at the start- and end-point respectively, determine the shape of the curve. If both control lines are on the same side of an imagined line joining the start- and end-points, the curve will be concave in that direction. If they are on opposite sides of the imagined line, the resulting curve will be s-shaped. Just how the control lines determine shape is illustrated in Fig 1(a) & (b).

Fig 1 was obtained by repeatedly drawing Bézier curves between points A and B. In Fig 1(a) the control line associated with A was dragged (with the mouse) round to make an angle of 90 degrees with AB and then as each new curve was plotted its control line was successively extended in constant increments. The control line associated with B, in both parts of the figure, always lay in the direction BA and was always the same length. To obtain 1(b) the control line associated with A was kept of constant length while the angle it made with AB was incrementally changed.

It is worth noting that of all the curves that could have been drawn between A and B, the Bézier set is relatively simple in form. In fact there is no dramatic difference in the shapes of Fig 1(a) and 1(b). Increasing the length of a control line simply expands a curve without altering the basic shape. Each of the curves in 1(a) can be obtained from its predecessor by a scale factor. Varying the angle of a control line does alter shape but in a simple way: the position of maximum excursion shifts in the direction of rotation.

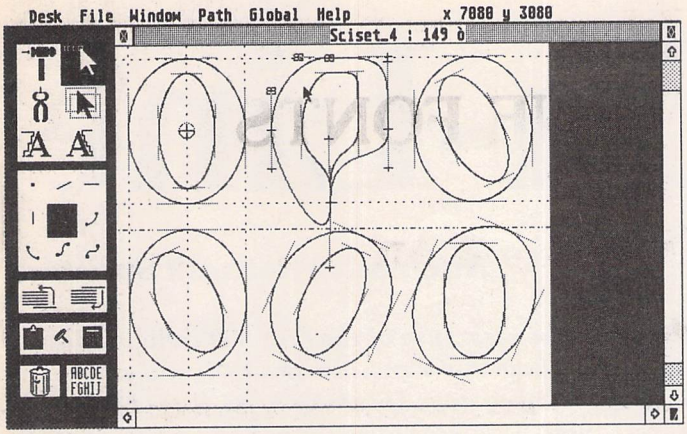


△ Fig. 1: The shape of a Bézier curve is determined by the position and length of its control lines.

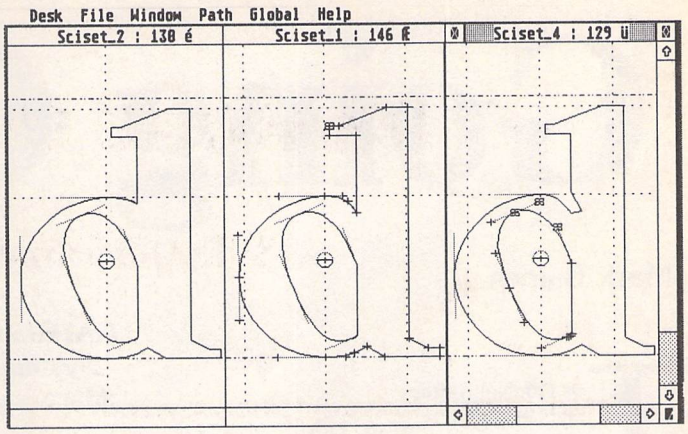
Ellipses and 'O's

When starting to draw a typeface I like to begin with the 'o's. From lower case 'o' an 'e', 'c', 'b', 'd', 'p', 'q', '6' and '9' can be derived and from upper case 'O', 'C', 'G', 'D' and zero are attainable. That way you get off to a flying start with 14 letterforms. However some versions of 'o' present a few drawing problems and I have constructed Fig 2 to illustrate them. In so doing I have exaggerated the eccentricities of the ellipses: normally an 'o' would be more rounded and if you were drawing according to old-face proportions, the outer ellipse would be a full circle and the problems I am about to discuss would not exist.

First, however, it is instructive to look at how Fig 2 was obtained because it illustrates some of the manipulative facilities of font editors. I drew only the first character as it appears at position (a). Some font editors provide a separate tool for drawing ellipses and circles but with Fonty which I have been using, it is necessary to plot five points with the appropriate Bézier curves attached. The coordinates of these points are known because they are the mid-points of the sides



△ Fig. 2: Even a simple letterform such as 'o' can pose some drawing problems.



△ Fig. 3: Pure geometry does not always yield an acceptable letterform.

of the rectangle which encloses the character and that is why it is important to have selected a set of proportions before starting to draw. To plot points precisely, either zoom up to maximum magnification or (with Fonty) plot the point roughly a low magnification and then call up and edit the coordinates in the 'point position' dialogue box. The coordinates of the inner ellipse are also known because a weight will have been selected for the face together with its contrast (i.e. the ratio of the thick parts to the thin parts). To complete the task it will probably be necessary to adjust the control lines in such a way that those at the top and bottom of each ellipse are horizontal and of equal length and those at the sides are vertical and equal.

Five copies of the character are generated as follows. Copy the existing character to the clipboard and then, using the calculator, shift the copy in the window to the centre position. Cut the copy on the clipboard back to the window. [In Fonty you can only cut from the the clipboard.] There are now two 'o's in positions (a) and (b). Copy them back to the clipboard and again shift them to the right. Although there are two characters in the window, the editor treats them as a single character and shifts them simultaneously. Cut the copies on the clipboard back to the frame. There are now three identical 'o's in the window but the centre character consists of two copies precisely in register. Switch the editor to 'select path' mode and delete one outer path and one inner path from the central character. Copy the three characters to the clipboard and then, with the calculator, either shift those in the window down or reflect them down to the lower positions. Finally cut the top row from the clipboard back to the window. There are now six 'o's in positions (a) to (f).

Only Fig 2(a) remains in its original form. It demonstrates vertical stressing i.e. the thick parts of the character are vertical and the thin parts are horizontal and that is the most common style of letterform. It is easy to draw and a problem only arises when it is rotated to produce an italic version (see below). Fig 2(b) owes nothing to intoxication (I swear it!); nor am I offering it as an alternative to the more classical designs. It is simply another demonstration of how Bézier curves can be manipulated by their control lines alone.

Diagonal stressing (Fig 2(d)) is an alternative to vertical stressing and I believe it offers more scope for interesting variations in letterforms, bearing in mind all the characters that are derived from 'o'. However it does pose a drawing problem. If the inner ellipse of 2(a) is simply rotated anticlockwise with respect to the outer ellipse, contrast is altered (Fig 2(c)) and although the effect is small (if the angle of rotation is small), it is noticeable. Fortunately it can be adjusted. Before rotating the inner ellipse its major axis (the long one) needs to be shortened and its minor axis needs to be lengthened. If you know some coordinate geometry you will have realized that the required lengths can be calculated. Alternatively the resources of the editor can be deployed on a trial and error basis. When the inner path (ellipse) is selected it is outlined by a rectangle whose dimensions can be altered by dragging any of the edges with the mouse. In addition, the combination of the alternate key and the mouse produce a rotation about the centre of the rectangle. Before embarking on this method it is a good idea to copy the starting configuration to the clipboard. If you get it badly wrong you can always start with a fresh copy.

The other problem, mentioned earlier, occurs when creating an italic 'o'. Of course it is always possible to slant or skew characters (that is one of the standard functions on font editor calculators) and it is a useful first step with letters like h, m, n etc but it is less satisfactory with an 'o' (i.e. it is less geometrically pure). However, if Fig 2(a) is rotated clockwise, the outer ellipse becomes detached from the base line and x-line (Fig 2(e)). In this instance the major axis needs to be lengthened before rotation, either as the result of a calculation or by the trial and error method outlined above. To preserve diagonal stressing and contrast the inner ellipse will also require adjustment (Fig 2(f)).

If diagonal stressing is implemented as an exercise in pure geometry, it does pose some interesting problems in the letterforms derived from 'o'. Fig 3 which is a bold face, is a typical example. Fig 3(a) has been drawn as a pure geometrical form. The junction angles are all nice and open but when printed there will be a great mass of black in the region of the upper junction and it is likely to clash with other letters in the set. Pulling down the upper point (Fig 3(b)) reduces the area without dramatically distorting the geometry of the outer ellipse but it produces an acute angle junction that will be susceptible to in-filling. That possibility is reduced by cutting a notch (perhaps more elegantly than I have). In this particular example I am not suggesting a perfect solution: my main objective is to indicate the problem. In general, however, you will find that geometry alone seldom solves all the problems. But it can be a useful guiding theme when drawing letterforms and may only require minor modifications to be made.

Going On-Line

Mark Baines

Alternative Network Structure

Last month I detailed the structure of the FidoNet Bulletin Board System Network and how this structure naturally gave rise to a hierarchical addressing system. This month, we'll see how other non-FidoNet networks cope with this format.

The FidoNet address standard is pretty straightforward until someone comes along and wants to set up a completely different network from FidoNet and yet use its technology and protocols so that mail can be transferred between them, and the same BBS software used to accommodate them both. In the UK we have two networks which are run on, and primarily cater for, Atari computers – NeST and TurboNet. Both are international networks like FidoNet, although not as widespread or as big, of course.

The problem comes when you have to devise addresses for the nodes within these networks. You cannot use FidoNet ones because of the duplicity and confusion. To get around this each network takes a unique Zone number to identify it. NeST uses 90 and TurboNet has 100. These do not identify a continent or other area of the world and so are not used in the same manner as FidoNet addresses. Having taken up one level of the address hierarchy as a network identifier, the rest of the address is also modified from the FidoNet standard to cater for similar regional information.

NeST

In NeST for instance, the Regions are identified with one or two digits after the Zone/network identifier:

1 – United Kingdom
2 – Canada
3 – The United States
4 – Germany
5 – The Netherlands
6 – Australia
7 – Italy
8 – France
9 – Austria
10 – Switzerland
11 – Sweden
12 – Russia
13 – Greece
14 – Norway
15 – Denmark
16 – Luxembourg
17 – South East Asia
18 – Belgium

As with FidoNet, the Region and Network numbers are combined so that Hosts have numbers consisting of the Region number followed by two more digits. In the UK Region 1, the Network Hosts are therefore:

100 – NeST Northwest (Region 1, Network 00)
101 – NeST Norfolk (Region 1, Network 01)
102 – NeST Southeast
103 – NeST Midlands
105 – NeST Scotland
106 – NeST Southwest

Each node within a network takes another number, the third part of the 3D address. This number can be anything from one to four digits. Some Network Hosts impose a logical node numbering system, others are more esoteric! In the Scottish Network I am a private node with an address of 90:105/5 which therefore breaks down into the fifth Node (5) in the fifth Network (x05/ – Scotland) within Region 1 (1xx/ – the UK) in the NeST network (90:).

As individual networks within NeST aren't particularly big, Hubs are a rarity. Their numbering does follow logical considerations however.

TurboNet

The TurboNet addressing structure is similar to that of NeST. TurboNet rather confusingly refers to each of its four Regions as Zones:
Zone 1 – Europe
Zone 2 – USA
Zone 3 – Canada
Zone 4 – Asia

In the Region/Network part of the FidoNet 3D address, this takes up the first digit. The next digit is the Regional level, the third is the Network level and the fourth the Hub. The Node still has a number after the slash consisting of one to four digits.

Region 10 – Europe, UK
Region 11 – Europe, Germany
Region 12 – Europe, Scandinavia
Region 20 – USA, New York
Region 22 – USA, Eastern
Region 29 – USA, California
Region 30 – Canada, Alberta
Region 40 – Asia, Singapore

In the UK Region there are eight networks:

101 – London Net
1011 – London North Net (a Hub)
102 – Northern Net
103 – Eastern Net
104 – Western Net
105 – Central Net
1051 – South Central Net (a Hub)
106 – Scottish Net

Node numbers are generally issued consistently which makes the TurboNet addressing format very logical where the location and status of any one node can be easily identified. As a Point system to TurboNet my address is 100:106/0.10 which breaks down into being a Point off Node 0 in the sixth Network (xx6/) in the UK Region (x0x/) in the Europe Zone (1xx/) belonging to the TurboNet network (100:).

Domains

There are many other networks around the world all using the FidoNet standard of addressing so that mail packets can be compatible. Any BBS can use a single BBS program to cater for several networks, and gateways between networks can be established so that mail from one system can be imported into another. It is conceivable that identical Zone and Network numbers could be used by different networks, although in practice this is unlikely if the Zone number is always used and networks use unique identifiers instead of Zone numbers, such as 90: and 100:.

To overcome any problem that may occur an additional field can be used in FidoNet addresses – the Domain. This is an Address Complement and is connected to the normal 3D or 4D address at the end with a '@' sign and looks rather like an ST or MS-DOS file name. FidoNet addresses can have "@fidonet.org" attached to them, the ".org" part meaning that this network is the "original". All other alternative networks have ".ftn" showing that they comply to the FidoNet standard. Thus, "nest.ftn" and "turbonet.ftn" can be added to the ends of their respective addresses. That completes all my BBS addresses:

FidoNet 2:259/29.10@fidonet.org
NeST 90:105/5@nest.ftn
TurboNet 100:106/0.10@turbonet.ftn

Armed with these numbers any user can send EMail or NetMail to any other user. EMail or NetMail is a private message directed through the network to the addressee as opposed to EchoMail or ConfMail which are those messages displayed in the public echoes or conferences. However, because FidoNet is such a big system NetMail can get lost especially if sent to another Zone. But why not try it? My address is above!

UPDATE

Version 13.5 ~ August 1993

ATZ.02: ST Club A to Z disk. Alphabetic lists of programs in ST Club Catalogue 13 plus Updates to 13.5

Applications

UTI.274: JC LABEL v1.8: label printing program suitable for address labels - database of labels can be saved to disk. This updated version features: Sorting of labels, plus extensive Printer Setup features that include: Draft printing, selection of internal printer fonts, support for Italic, Condensed, Wide, Proportional and Double Strike, colour printers, and custom printer settings.

UTI.317: GNU PLOT v3.2: very powerful function plotting package with 45-page manual plus online help. Let down by a rigid CLI interface and the lack of a GEM interface.

UTI.318: THE TREASURER: accounts package for Church Treasurers. "In return for weekly inputs (the details of all Church income, expenses, and personal contributions) this program develops a comprehensive data base and it makes various correlations that support most of the operational needs of the office of Church Treasurer." An American package with extensive documentation...(C)

Clip Art

SSM.106: Scanned pictures of work by Lise Bis Jensen, a Danish painter. Files are in IMG format and an auto-running slideshow is included.

Scanned Clip Art in IMG format:

SSM.107: People: IMG files are: Angry; Baby; Baby2; Caramon; Chorusln; Couples; Cowboys; Dazed; Einstein; Face1; Face2; Faces1; Faces2; Faces3; Faces4; Family; Flint; Girl; Girl2; Goldmoon; Gothic; Grandpa; Hag; Haircut; Hallo; Heroes; Kathy; Kinnock; Laughing; Leccyman; Mad; Manman; Mrsfinn; Obeso; Raistlin; Recline; Remember; Riva; Riverwin; Runner; Sherifin; Soldier; Steve; Strngman; Surfer; Ted; Thatcher; Tim; Toddler; Tomcolin; Tramp; ›Famous People: Castro; Christie; Geo_wash; Kendodd; Lisa; Literari; Marx; Mikeyfin; Pingpong; Pinokio; Politics.

SSM.108: Sports: IMG files are: Angler; Badmint; Batter; Beach; Bild1; Bild11; Bild12; Bild14; Bild18; Bild19; Bild20; Bild21; Bowler; Bullseye; Darts; Darts2; Downhill; Equest; Fishing; Fitness; Football; Fore!; Goaly; Golf; Golfist2; Golfista; Golfsand; Gymbars; Homesafe; Horserid; Icegoal; Indoor; Karate; Layup; Pigskin; Pitcher; Qtrback; Racecar; Rowing; Scuba; Scuba2; Skierfoo; Sports; Sports01; Sports3; Sports32; Sports4; Sports42; Strike!; Swimdive; Tennis; Tennisru; plus Sports01.Tny to Sports28.Tny

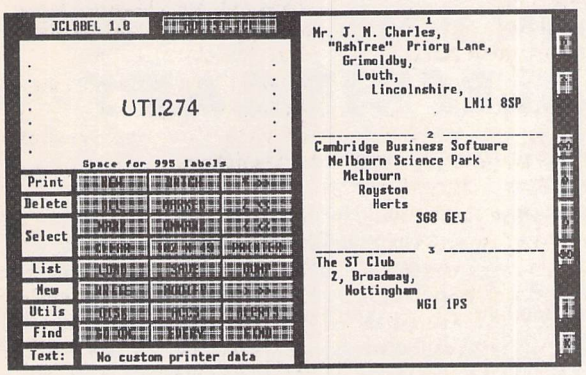
SSM.109: DTP Items and Vignettes: IMG files are: BANNER; BANNER3; BANNER4; BIRTHDAY; BORDER1; BORDER2; BORDER3; BORDER4; EDITOR; INFO; MEMO; MUSIC; NEWS; NEWS2; RPTCOVER; SCROL008; SCROL010; SCROL013; STRADIVA; TELEFON2; THANKS; ›VIGNETTES: VIG01 to VIG49.

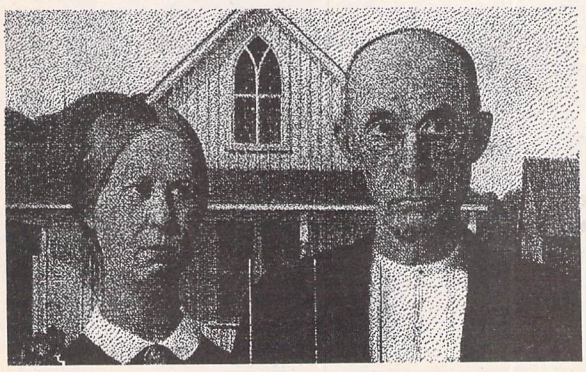
SSM.110: Engravings: IMG files are: Bambini; Cacao; Castiron; Chandlie; David; Dragon_1; Gift; Hurrah; Profmus5; Stoneage; Unicorn; Windman.

SSM.111: Animals: IMG files are: Beauty; Birdbox; Birdfly; Blawhite; Cat; Catnmse1; Catnmse2; Catsnest; Dalmatio; Eaglesha; Echidna; Ecology; Egret; Ephelump; Farmanim; Froggy; Froggys3; Ghoppers; Hegogsta; Jaguars; Jasmine; Leopards; Lion; Mice; Mononbra; Mouse; Msoftcat; Outlcat; Pengskat; Pennu400; Piggy; Pointer; Poppydog; Rabbit; Rabitham; Rabithat; Rabitkip; Rat; Redshank; Sharks; Snail; Walkies; Wren; Yorkies.

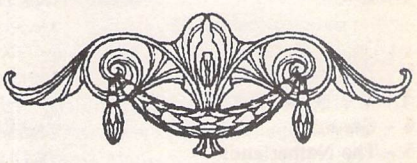
SSM.112: Miscellaneous Clip Art: 164 IMG files from Alley Bin to Oldsmbile.

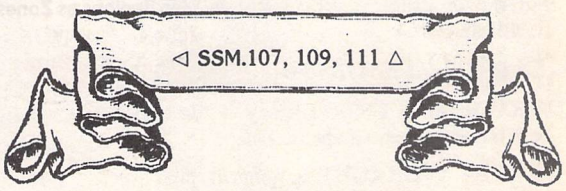
SSM.113: GEM format vector graphics clip art. GEM Files are: Autos; Bank; Bigtruck; Borders2; Bus; Cameras; Capitol; Caps; Church; Clip_gem; Coalcar; Columbia; Computer; Crane; Cycles; Doctor; Faces2; Factory; Forklift; Gaspump1; Gears; Girl; Golf; Helicopt; House; Illusion; Light; Mann_1; Manpower; Map; Map_01; Map_02; Menu_2; Micscope; Money; Mädchen1; Observat; Oil; Pensetc; Phone; Powrplnt; Readme; Religion;





"I tell you, Margaret, I tell you straight, I just *don't* believe it!"





Rider; Safety; Sample_l; Scarcrow; Stripper; Student; Tables; pe; Tools; Tractor; Trains; Tree_01; Tree_02; Tvs; Windmill; Yantra. >Frames: Borders2; Box; Clipbrd; Discs; Fancy; Frame; Oval; Picframe; Scroll; Signpost; Splash; Temple; Vines1; 1_l to 9_l. Borders: All16; Border1; Border10; Border11; Border12; Border13; Border14; Border15; Border16; Border2; Border3; Border4; Border5; Border6; Border7; Border8; Border9; 1_p to 9_p. >Veteran Cars: Banger; Delahaye; Gp_itala; Napier; Riley.

Colour Art

SSC.123: WILDLIFE SLIDESHOW II: Slideshow of nine Photochrome format pictures of jungle wildlife pictures digitised using Rombo Vidi RGB.(C)

SSC.124: BIRDS pictures by Jos Milton. Files are: Bullfinc; Chafincc; Cardina2; Chafinch; Fopecker; Forngale; Forredst; Forrobin; Fortudov; Penqui03; Dunnockc; Goldfinc; Greattic; Grefincc; Greylagc; Grosbeac; Kestrelc; Lapwingc; Macawc; Magpiec; Migrantc; Redstarc; Robinc; Swallowc; Tomtitc; Wheateac; Wrenc; Yelhammc; Birds in Surroundings: Flamin0c; Fongalec; Forbtitc; Forbulfc; Forchafc; Fordovec; Fordunoc; Foredstc; Forgrfic; Forgtitc; Forobinc; Forwrenc.

Communications

COM.55: RADIO UTILITIES: AERIAL v1.5 - Radio aerial length calculator, for receiving FM signals; COMCODE v1.0 - morse code practice program that sends a coded message, or random characters for the user to practice Code Copying; CW_TUTOR - LITTLE VILLIAN MORSE TUTOR - helps in getting through the Radio Amateurs' 12 words per minute morse test - has a maximum upper speed of approx 15 words per minute. DISHSPEC - Parabolic Dish Assessment Program. LOGBOOK - station log-book that meets licence requirements. MORSE - Morse code tutor ($PAS); NEF_COIL; OSCAR RS - Satellite Orbit Calculator; P_MORSE - morse tutor; QSObase v1.0A - Amateur Radio Callsign Database demo version; RESONANT; SAT/CALC - Satellite television dish-aiming program; SUPERCRD - Radio station addresses datafile along with a copy of the shareware version of B.Ware's Supercard database; TERMINAL - PC and ST versions of FCONVPC7; TIME FINDER - Calculates the No. of blocks, & X-Modem time for different baud rates; WEATHER - Weather satellite orbit predictor/calculator.

Drawing

GRA.175: PAD 2.4: Fully featured mono drawing and painting package from Germany. Supports GEM and Signum fonts, Degas, DOO, PAC, and IMG files and features 10 screens in memory at once plus an animation facility. Updated disk, now includes an English manual, but the program is still mostly in German. (1MB:M)

Educational Software

EDU.45: 1900's USSR: History of the USSR with lots of data and maps.(C:1Meg)

EDU.46: WORKOUT - general purpose learning aid, for either question and answer tests or learning passages by heart. Supplied with a selection of ready to go quizzes and comprehensive documentation on how to develop your own; FORTNIGHT 1.1 - mouse controlled picture slideshow that shows when the chief events in Biblical history occurred (C); THE COLOUR FINDER - gives the RGB numbers of any colour in the current palette; DISKFREE - writes a file whose name indicates the free space left on the disk - may be run from AUTO folder; LAZY DATE - quick and easy way to set system date at boot up.

Fonts

FON.140: Updated disk - Oxford font has been tidied up.

FON.148: PostScript Type 1 Fonts. Suitable for use with PageStream and Didot or for converting to Calamus fonts with Fonty. Disk 1 of 2, fonts are: Blkchanc; Bodidly_; Bubble; Caveman; Chester; Clashvy; Clasital; Elwood; Hamburg; Kabelbld; Kabeldem; Modprtbd; Oswald; Prisma; Sharkf; Slant; Stencil; Tempoit; Thomas.

FON.149: PostScript Type 1 Fonts. Disk 2 of 2; fonts are: Bernmod; Clasrom; Cornwall; Cunie; Deusex; Elgarret; Flint; Jacksonv; Kabel; Kabelmed; Leecaps; Miamin; Oswald; Sh; Stc; St; Tempo; Zac; Zih; Zil; Zirkle; Zis.

Games

GAM.166: Updated version of MAD MOLE by Adrian Speight. Inspired by the old Boulder Dash game. Lots of features, screen designer, and sixteen ready-to-go screens. Now includes STOS source code.($STOS:C)

GAM.218: COARSE ANGLER: Fishing simulation! Tackle, bait, water and weather data has been taken from real sources and the simulation is good enough for beginners to experiment with tackle and venues; also great amusement for the seasoned angler.(C:1Meg)

GAM.219: FATEMASTER from Animalsoft: fantasy arcade game.(C)

GAM.220: The Three Realms of Suspicion v1.2: unusual adventure game planned to be the beginning of a continuing saga of a whole new world. No scenerios or character descriptions are given until you are into the game.(C)

GAM.221: BLOX v2: Clever variation on Tetris played on an hexagonal board, with hexagonal pieces fired at the middle from each corner. The aim is not simply to get "lines", but to create "rings". Slick graphics and sampled sounds.(C)

Graphics

GRA.158: GemView 2.24: Excellent viewing utility for graphics files. New Features include: absolute size option for zooming, grey-levels support, diagonal scrolling, conversion only option, free scaling of metafiles, and loads 1st Word documents. Loads RSC-Files, PCX colour pictures, VIDAS, GIF89a and GIF87a images, HAM - Hold & Modify images [IFF], PC Paintbrush [PCX]; loads and saves TARGA; saves TIFF, and BMP (Windows Bitmap). TIFF support now includes: uncompressed, Hohe Packungsdichte, PackBits (Macintosh RLE), and NeXT RLE.

DRD*11: COLOURBURST II v1.3: graphics editor allowing MORE than 512 colours on the screen at once! Flicker from the interlace is much less of a problem than with Quantum Paint pictures - an excellent package that allows other programs to be run from within the program. Updated disk includes the final version of this program along with the full C

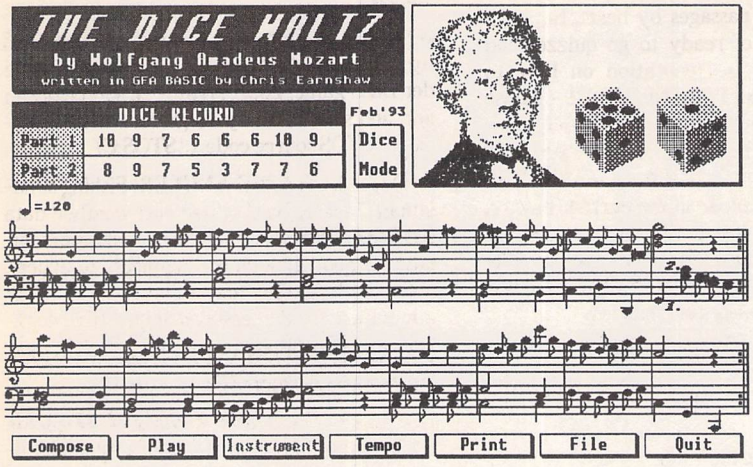
FON.149: PostScript Type 1 Fonts (second disk of two)

That's Write and Write ON Fonts

These fonts have been converted with C-Font2 from PD Calamus fonts to That's Write and Write_On compatible screen (90x108dpi) and printer fonts. The fonts are: at 12, 14, and 18 points: ARC25, ARC75, ARC90, BODONI, CALIGULA, CELTIC ROMAN, CHANCERY, FRAKTUR, FUTURIST, GLIP ROMAN, GRAPHIC LIGHT, SOUVENIR MEDIUM, SWISS25, SWISS50, UNIVERSITY ROMAN; at 16 and 20 points: BURLINGTON, DRURYLANE; at 14 and 18 points: TIMES50. Fonts are supplied in self extracting archives.

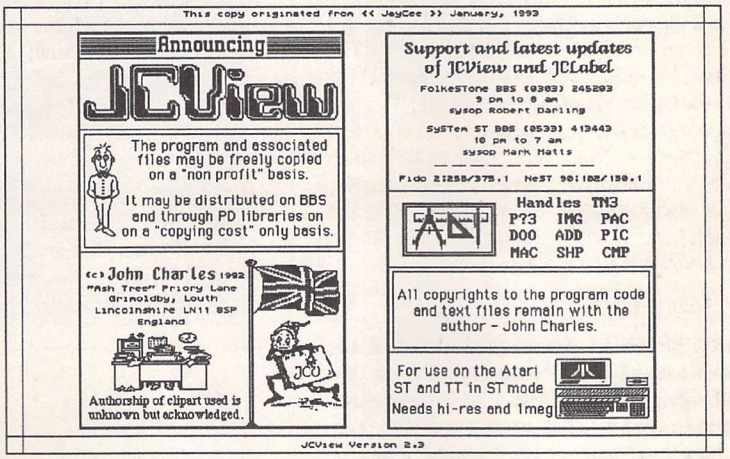
FON.150: Screen fonts and 9-pin printer fonts for Epson FX compatible printers. **FON.151 and FON.152: Screen fonts and 360-dpi 24-pin printer fonts.**

FON.153 and FON.154: Screen fonts and 300-dpi laser and DeskJet printer fonts.



MUS.88

EDU.46



DRG.56

source code. (C:$C)

DRG.56: JC VIEW v2.3 - Clip Art viewer and paint program. Can load and manipulate PI3, PC3, PAC, TN3, ADD (sticker), SHP (Printmaster), MAC, DOO, CMP, and PIC. Lots of new features in this updated disk.

Information

INF.62: STEN Issue 13.

INF.63: STEN Issue 14: Features a question and answer session with Darryl Still of Atari UK; the latest news about the Falcon; the notorious 'Forbes Magazine' article about the Tramiels; Technology News from Felix Sylvestris; the Graphix Area with DeskJet Corner, reviews of 'GEMview v2.01', 'Pic Switch v1.01' and the MyDraw shareware vector art programme; personal columns from Stephen Ticehurst, Ron Walker, John Weller, et al; OK reviews; interviews with Steve Delaney of Floppyshop and Jeremy Hughes of 'Fontkit' fame; technical articles about the CD formats; and all the latest news from the ST world.

Languages

LAN.47: HELP 68000 accessory has now been translated to English.

LAN.143: C Source Codes: CPRINT - utility program for pretty-printing of C programs on Epson-compatible dot matrix printers; C_TUTOR - C Tutorial aimed at users with some programming knowledge but no experience of using C. Written for MS DOS machines but texts and source cods may be readily used on ST; DISSRAC - Reassembler V1.0; DRUNKEN - pattern generator; FINDWORD - search for a word in a binary, or text file; FONTSEL; INPUT - Bconin(2) programming example; MINES - source code for Minesweeper game; PI1 to MONO - displays Degas PI1 files in monochrome. ($C)

LAN.144: GFA Utilities and Source Codes: MNILU - compiler and will compile GfA BASIC v2 files into stand-alone GEMDOS executable files; U_GFA_DB - Ultimate GFA Database - numerous references to sources of help with programming in GFA Basic; WERCSGFA - WERCS GFA - Converts .H files generated by WERCS into .LST format for use with GFA Basic; ACCLOAD; ANIMATE; BITBLOCK; CONVERT; DEGASPIC; DTP; FRACTALS; F_PLOT; GAME; GETDIR; GFA; SPELWORD.

LAN.145: GFA Source Codes: GFA GFA MENU - Menu bars for GFA Basic; GFA REV; GFA30DMO; GFABASIC ORD; GFADEMOS; GFA PAT V20; GFA_V3; JOYSTICK; KONVERT; LOADPC1; LSPRITE - Sprite and mouse editor; MORTARMN; PAL DEMO; PIC CLIP; PSAVE300 plus 27 other files.

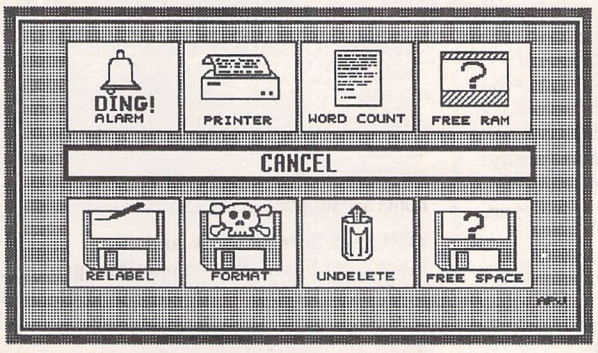
LAN.146: GFA Source Codes: Over 100 example programs in GFA Basic.

LAN.147: Assembly Language: ASS2000 - PD version of Assembler 2000, example source files and the full source code to the game EVASION. WHATAHECK Source codes for the whattaheck screens by STalin of Flexible Front. Plus a wide selection of macros for use with Devpac ST.

LAN.148: FCC MENUES. The Hitchhikers HiSoft BASIC source codes for the menues in seven of the FCC demo disks, plus a program that allows data files (or pictures) to be included in BASIC programs

Music

MUS.88: MOZARTS DICE WALTZ - updated disk. Now writes standard MIDI format files, can save and load dice throw files, and will playback using two MIDI voices (M).



WPR.35

WP and DTP

WPR.35: WP TOOLKIT on this disk has been updated to v1.2 - features include: Alarm, Printer set up including option to select type-faces - useful with printers such as the Canon BJ-10ex which has no way of selecting the type-face from the front panel, Word Count - counts number of words in 1st Word documents or ASCII files, Free RAM and Disk Space indicators,

KEY

All disks should run on an Atari ST, STM, STF, STFM, STE, Mega ST, Mega STE, TT, Stacy or ST Book with at least half a megabyte of RAM, a double-sided disk drive and a mono or colour display - unless the disk description advises otherwise. We no longer support single-sided disk formats. Disks have not yet been tested for Falcon030 compatibility - details on this will be reported in future Updates.

(M) - Runs in High Resolution Mono.

(C) - Runs in Medium or Low Resolution Colour.

(1Meg) - Needs one megabyte of RAM.

(Not TOS1.6) - Will not run under TOS 1.6 (STe) or TOS 1.4.

($) - source code included.

($C) - C language.

($ASM) Assembler.

(F) - Falcon required.

Ordering Details

Please note that we do not accept orders by credit card. Orders accompanied with a cheque or postal order are dispatched by 1st Class post on the day we receive them.

All PD disks are copied onto high quality disks from known manufacturers. The price you pay us for PD disks covers only the costs of acquisition, duplication, cataloguing and distribution.

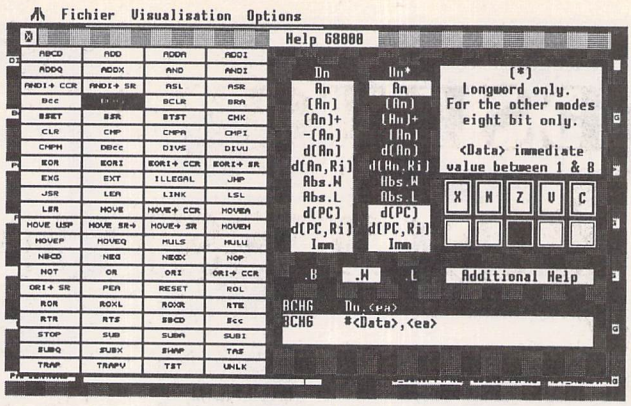
PD and Shareware Disk Prices

up to 6	£1.45 each
7 to 9	£1.25 each
10 to 24	£1.00 each
25 plus	£0.85 each

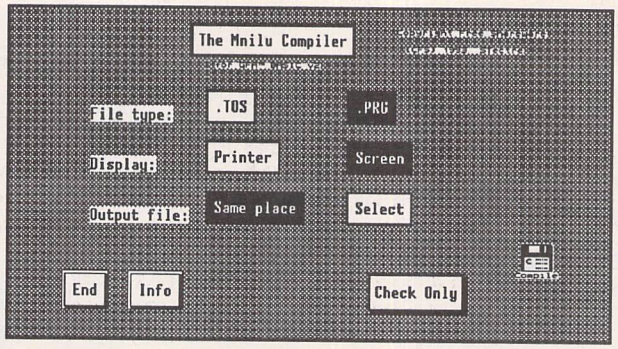
Licenceware disks cost £2.95 or £3.95.

All prices include VAT, packing and 1st Class post.

The Order Form for these disks is on Page 57



LAN.47



LAN.144

Relabel a floppy disk, Format Disk, Undelete - for when you accidentally delete a file.

PDD.89: EPIC.STY added to this disk.

PDD.90: Updated disk - now includes English versions of CTEX and CMF.

WPR.115: Calamus Support disk: Now includes JC-CFN-View v0.3 - a viewer for Calamus CFN fonts. (M)

Falcon Demo's

XXX.248: BSS Falcon030 Demos: These demos have been written by UK based Black Scorpion Software, a development team working on Falcon specific games. PLASMA30.PRG and PLASMA50.PRG - spins and stretches a True Colour picture at 30 or 50 frames per second while playing a 50HZ stereo soundtrack; SPEEDER - magnificently smooth simulation of a spaceship flying through a fractal landscape - based on the SNES mode 7 chip; INTEL.PRG- True Colours with a playful dig at some recent Intel hype. (F)

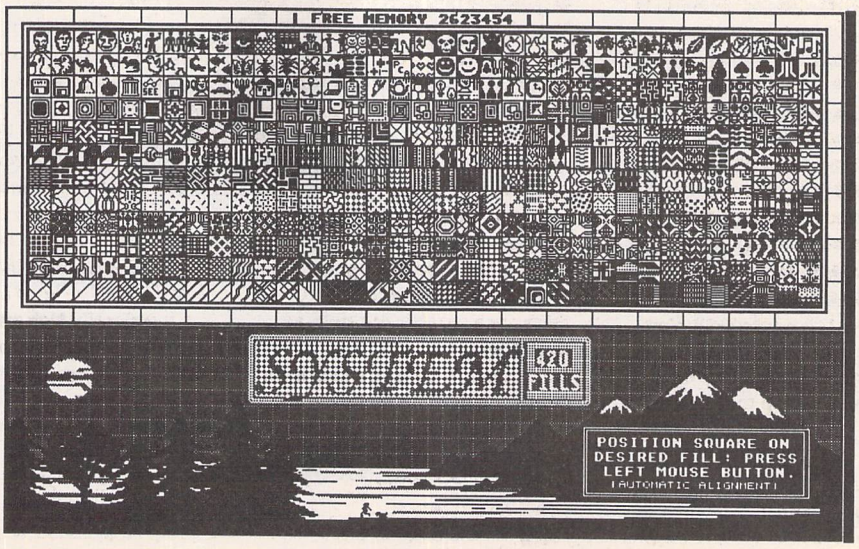
Budgie Games

GBU.114: THE RETURN OF JUSSE by Chris Skellern. Your mission is to find and return the last eight cocoons of Jusse to the mothership before time runs out. Once collected, the craft is docked so that lift-off can commence. Lasers are used to rupture steel doors and to destroy sentinals. The craft operates likes a lunar lander with thrust controllable in all four directions. By the author of Runaway and Avina Blue. Music by Gary Wheaton. (C)

GBU.115: EVASION 2 by Chris Skellern. Manoeuvre the Evader around a maze, collecting the marked tiles as you go. Time is in short-supply. Extra lives are awarded after each level. Collect flashing bonus markers for extra lives, mines, smart bombs and freeze pills. Similar in concept to pacman, but much faster and more involved. Also on same disk: RUNAWAY, the original hyperfast tunnel scraper. Hugely addictive! (C)

Budgie Productivity

BPR.29: MIK-FILL v3.0 by Mike Duncan. All resolution pattern editor. Grab 16 by 16 pixel blocks from any Degas picture or use the thousand plus ready-made fills supplied. Three save options: Save as a Picture, a Data file or as a GFA Procedure.



BPR29

DESKTOP DISCUSSIONS

The Global Coffee Shop

Usenet may be the largest electronic bulletin board system in the world but what has it to offer the ST user? William Hern provides a guided tour.

In ancient times, the library at Alexandria was the greatest single repository of knowledge in the world. Not only containing the complete texts of all Greek literature, the library was truly international with translations of works from many other countries. Its modern day equivalent is Internet, the worldwide computer network that connects academic institutions, government departments, research facilities and commercial organisations together, permitting an almost unimaginable number of resources to be consulted on a huge variety of subjects ranging from particle physics research to the current line-up of Broadway shows.

If Internet is the embodiment of the global electronic village then Usenet is its coffee shop. A bulletin board system of enormous proportions, Usenet has thousands of themed newsgroups, covering a huge variety of both technical and non-technical topics. Reading all the messages in even a single group can be quite an undertaking as the popular ones can have several hundred new messages each day (it is estimated that forty megabytes worth of articles is posted every day). Fortunately a number of specialist reader programs have been written which help to sift through the mass of mailings and allow the user to read only the items that are of real interest.

Apart from its size, the other unusual aspect of Usenet is that it is an anarchy – there is no central controlling force. For a machine to receive Usenet, all that needs to be done is to find another system that is willing to act as a feed and pass on all messages received by it. While this link-to-link communication may seem rather inefficient, it works well in practice and is very resilient to systems or lines going down. On average a message will have propagated worldwide within two days of being posted.

Computer science related subjects make up a large proportion of the groups (hardly surprising considering Internet's principle users) but there is also a wealth of non-technical boards. Think of a hobby, interest or pursuit and it's a fair bet that it will have its own Usenet group. If it doesn't, it is fairly easy to create one. All it needs is for someone to propose a new group in the news.groups group and then for a vote to be held. If enough people vote yes then the board is created. A well known computer scientist once joked that it was sometimes hard to tell whether Usenet was a glimpse into the 21st century, or a New England town meeting gone international.

As I've chosen to write about Usenet here, you probably won't be surprised to learn that there are a number of ST specific boards to which users can post pleas for help, discuss current affairs related to Atari and swap tips and information. The most general board is comp.sys.atari.st but there are a number of others as well. There is comp.sys.atari.st.tech which is for discussion of more technical ST topics, both hardware and software related. There are also two groups for posting new PD and shareware software, comp.binaries.atari.st and comp.sources.atari.st. Unfortunately the frequency of software appearing on the boards has fallen dramatically over the past eighteen months, another sad indication of the current poor state of ST development..

Those who enjoy a good argument will find comp.sys.atari.st.advocacy a delight. In this group, subscribers can argue to their hearts content with owners of other machines as to the respective merits of their computers. Not surprisingly, the Amiga versus ST argument dominates.

Another worthwhile group is alt.znet.pc which receives copies of the Znet Atari Online magazine. Znet is well worth reading for its lively mix of comment and articles and there is always something of interest in each issue. Alt.znet.pc also receives issues of Atari Explorer Online magazine. Considering that this is an Atari in-house production and so making allowance for its rather rose-tinted view of the Atari world, there have been some remarkably honest articles in it of late.

Finally, there are maus.sys.atari.software and maus.sys.atari.hardware which are dedicated to the German ST market. Most postings on these groups are written in German so their value to English speaking readers is rather limited.

As can be seen from the number of ST related newsgroups, Usenet has a thriving ST community. The level of discussion is generally high and there are plenty of highly knowledgeable users willing to answer the questions of the novice (and not so novice). There aren't many contributors from within Atari and since Allan Pratt left for Taligent, there has been no-one posting regularly to any of the boards. Eric Smith, the creator of MiNT and MultiTOS, does occasionally pop up with an article or two, though.

So how do you gain access to this treasure trove of information? If you have access to a networked Unix system either at work or university, it is quite likely that it is already connected (try typing rn, short for ReadNews, to find out). If you don't have access to such a system then all is not lost as there are a number of companies which will, for a fee, provide access to Usenet. Demon Internet Services (telephone 081 343-3881) are one of the best, although not particularly cheap. Signing on costs £14.70 and then £11.75 per month with telephone bills on top of that.. CIX (081 390-8446) also provide access to Usenet. In either case, I recommend a fast modem to help keep your phone bills low.

While I'm not aware of any books dedicated to Usenet itself, there has been a recent spate of books on the wider subject of Internet and which at least mention Usenet briefly. An excellent book for those just starting out is "Zen and the Art of the Internet" (Brendan Kehoe, Prentice-Hall, ISBN 0-13-010778-6) which has answers to many of a novice's questions, provides a good overview of the services available and also has a valuable section on net etiquette.

For the more experienced, I recommend "Exploring the Internet: A Technical Travelogue" (Carl Malamud, Prentice-Hall, ISBN 0-13-296898-3) which takes a very comprehensive look at the systems that make up Internet, with particular emphasis on the more remote and exotic nodes. For those who prefer exploring off the beaten track, it's compulsive reading.

STICKS AND STONES

In the last of his series of monthly columns, Günter Minnerup returns to the theme of the very first one: to invest, or not to invest, your hard-earned cash into a new line of Atari computers.

While thinking about how to wrap up this column, I went back to the very first STicks and STones nearly three years ago. It weighed up the pros and cons of buying a TT as opposed to deserting the world of Atari altogether for one of the newly-launched range of cheap Macs, perhaps even an IBM clone with the then equally new Windows 3. As regular readers of this column will know, I did eventually plump for the TT - then seen as spearheading Atari's drive for respectability in the serious market. A powerhouse of a personal computer with its 32MHz, 68030 chip, promising new horizons in professional TOS applications, much improved Mac and PC emulation as well as an entry into the brave new world of the UNIX operating system.

I should have known better. As I am typing this into my TT's keyboard, I am painfully aware that the computer attached to it is now to all intents and purposes a dinosaur, virtually unsupported by software houses, third- party peripheral vendors or even Atari themselves. UNIX never materialised in a usable form and even the Mac and PC emulators don't run on it. True, most ST programs perform a lot faster and there are some additional screen resolutions but I had expected the TT to be more than what it has effectively become: a sort of Turbo-ST. Indeed, adding an accelerator board, graphics card and VGA monitor to my Mega ST would have given me the same performance for less money, but with Spectre GCR and AT-Speed compatibility thrown in. No wonder it is now about as easy to deal in Polly Peck shares as it is to sell a TT.

It may seem churlish to recall the TT fiasco just when the launch of the Falcon is firing up the shrinking band of Atari addicts with a new wave of optimism and enthusiasm. Billed as the long-awaited successor to the ST, the Falcon does indeed have all the technical credentials to succeed and put the Fuji logo back on the map. Once again, I am tempted to buy a new Atari machine, and weighing up the relative merits of an investment in new technology from Sunnyvale against migration to the Mac or PC. This time, however, my eventual decision may well be different.

The TT, of course, is one reason. It is faster than the Falcon and can do most things the Falcon does, at least until the new machine's DSP chip begins to be properly supported by software houses. More importantly, however, I need to be convinced first that the Falcon has a real future and will not turn out to be yet another dodo in the long ancestry of prematurely extinct Atari hardware - the ATW, the CD-ROM, the TT. Its "launch" (what launch?) has rung warning bells with me as I cannot remember any such revolutionary new product marketed with less fanfare: the majority of technically-aware computer users in Britain are probably still blissfully ignorant of the Falcon's very existence. I am not at all sure that Atari are still capable of making the Falcon a success, however much the machine itself deserves it.

The days of the home computer are, in my opinion, all but over. When the Mac was too expensive and the PC too unfriendly, companies such as Atari and Commodore could make an impact with machines that offered lots of colour, speed, expandability and versatility for little money. Now that a 486 clone with Windows 3, SVGA colour monitor, 200Mb hard disk and a healthy selection of bundled professional software can be had for well under £1000, and dedicated consoles have cornered the games market, the "home computer" market has virtually disappeared. Even with the best promotion in the world, I just can't see the Falcon extending the frontiers of the existing ST market.

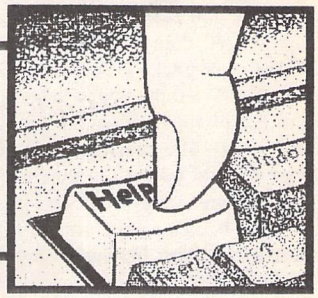
Against this background, I have yet to be convinced that Atari themselves will stick with the Falcon once the much-heralded Jaguar "home entertainment" system hits the streets in 1994. All the signs are that the planners in Sunnyvale intend to rebuild their corporate fortunes around the Jaguar rather than the Falcon, concentrating their slender promotional resources on a technically advanced product for the still-expanding games consoles and entertainment market. This would also be quite consistent with the nature of Atari Corporation as I see it after watching the frequent changes in their marketing strategy (if that is the word) since 1985: there is nothing in the world of personal computers that the Tramiels haven't tried, announced, launched, proclaimed, promised or pursued at one time or another. One day they were wiping the PC and the Mac off the face of the earth, the next Nintendo and Sega, then again Commodore. Rapidly shifting targets have included the business market, the educational sector, high-end desktop publishing, multimedia, portables, PC clones, the ATW, UNIX workstations, with MIDI and games being about the only sectors where consistent success and some continuity of presence was achieved. Of course they are not suddenly going to drop the Falcon again after all the - by Atari standards at least - considerable investment in it. But I wouldn't bet on them sustaining for very long the notion that the Falcon is going to take the general computer market by storm - nobody in Sunnyvale is that naïve, and their refusal to gamble any of the 40 or so million dollars cash which Atari Corporation reputedly holds ready on the launch of the Falcon shows how little confidence they have in the general computer market. More likely, the Falcon is going to be channelled into specialist niche markets (music, video) with little active support for the core applications such as business and DTP, and the multi-million market assault will be reserved for the Jaguar. Take note that it was news of the latter, not of the Falcon030, which made Atari shares rise again in the US stock market...

Time will tell if in two or three years from now Atari will still be considered a significant player in the general computer market, as opposed to a vendor of specialised MIDI and video systems alongside high-tech games consoles. Software houses tend to have a pretty good instinct in these matters, and most of them are deserting Atari in droves. Take DTP, for example, once the ST's flagship application: Fleet Street Publisher went under a long time ago. Calamus is now being ported to the PC. 3K, the developers of Didot Professional, have gone under. Timeworks Publisher is no longer developed for the ST. New versions of PageStream make their debut on the Amiga, with uncertainty over the appearance of Version 3 for the ST. Much the same is true of wordprocessors, spreadsheets and databases.

I don't really want to close this column on a gloomy note. I have had much fun with Atari, I shall stick with Atari for some while yet, and I am genuinely hoping that, in a year or so, I will look around and find good reasons to invest in a Falcon 040. But something tells me I won't, and it could well be the voice of reason.

Günter Minnerup

FORUM



Pirated Software

Simon Green – Forum STA 30
John L Masterman – Forum STA 31

I Paying £25 to £30 pounds for a game is cheap compared with the £60 that Nintedo charge for a game here in Sweden. Even at these prices Nintendo has got 70% of the games market. This is something for Atari to compete with: £25 would be a bargain!

By the way, why don't games developers for ST computers make cartridge based programs? As far as I know every ST has got a slot for cartridges so there shouldn't be any problem. In this way the pirate problem would disappear.

There are several different kinds of systems to make life difficult for pirates: limited number of backup copies, installing the user's name, etc. Has anyone done any research on how successful these systems are?

Jonas Möller Nielsen
Sweden

● The major problem with the ST cartridge port is that it addresses only 128K – there are ways around this but they would not be sensible for games cartridges. On a computer-based system it is inevitable that once the game is loaded into RAM it will be vulnerable to being accessed, cracked and distributed in a 'pirated' version. Sega and Nintendo cartridges are now being pirated on a wide scale, and the details on how to make your own cartridges are readily available on many bulletin boards in the US. (Console makers also have a major problem with cartridge counterfeiters in the Far East.) CD ROM offers little hope for software publishers – pirating a game onto 500 HD floppies would deter most pirates, but with CD ROMs that can write to ROMs arriving on the market at £4,000 it must be only matter of time before they become accessible to pirates.

As chip prices continue to drop (a 64-bit console for $200?), the chances are that the game and console could be manufactured as a single sealed unit for the same prices as one of today's console cartridges. A PC on a chip is already being developed.

The Forum pages are a regular feature of ST Applications, enabling readers to exchange ideas and help each other out with problems. Whilst we attempt to briefly answer questions here, if you have additional information or ideas please do submit them for publication. What you consider to be trivial information can often be of condiderable use to other readers!

Please send your letters on disk if possible. Disks will be returned with a PD of the writer's choice. Longer submissions may appear as articles, in which case you will receive payment at our standard page-rate.

Key:

The following codes are used for each Forum entry:

J Pringle - Forum STA 20: Author who first raised the subject, and in which issue.

Q Question

A Answer

I General information or 'Input', advice, discussion, hints and tips, etc., with or without reference to previous Forum pieces.

PC vs Atari

Wendy Durham – Forum STA 24
Alan Kennedy – Forum STA 24
Stephen Murgan – Forum STA 24
Gordon Carruthers – Forum STA 26
Dave Ansell – Forum STA 30
Alwyn Thomas – Forum STA 31
Bob Osola – Forum STA 31
KS Grings – Forum STA 31

I I have read with great interest the recent debate in ST Applications. Much of it seems like the guilty apology of people trying to explain why they 'don't want to be in our gang any more'. They can see the green fields of PC & Windows 3.1 and feel uncomfortable with the 'non-U' Atari people. The move would be less painless, it seems, if we all saw the light and made the move together.

It is this kind of pressure which has kept the PC market alive for so long. The saying 'You don't get sacked for buying IBM' still rings true today, and it is the support of millions of customers, not the PC or Microsoft, which creates the market. These are the same pressures that sell VHS videos in preference to the higher quality and more compact BETA (remember that?) system. The market and marketing are everything. The actual technological route taken, be it compact cassette or 8-track cartridge, Beta, VHS or PC2000, 68000 or 8086, holds little sway once the products get to the shops.

Why else would people have been so patient with Microsoft while they stumbled through versions 1 and 2 of Windows? Does anybody remember Windows v1.0 with its four non-movable non-resizable tiles? People were willing to wait because they had faith that their chosen product would survive. As soon as this faith develops then software houses and hardware manufacturers stay with the customers, or else. Strangely, we are all waiting for Atari to make a success of the Falcon. How much work did IBM put in making a success of the PC? At the time they would have been pleased if the whole personal computer idea had gone away and left them with their corporate mainframe business intact. The punters decided that they wanted a PC and Lotus 123 on their desk, just as they had decided several years earlier that it had to be Apple II and VisiCalc. As it happens, the PC has been a disaster for IBM if their current financial position is anything to go by.

In order to secure the 'success' of the Falcon and TT, if business computing success is what we need, then Atari must make a play to get Windows NT ported to its machines. This is the only way to sidestep the fear and ignorance that drives the computer market, to get Atari back into the mainstream. Already though, we know that 'NT' will require 16 Mb of RAM and 70 Mb of hard disk space just to run. On any platform, PC, MAC or Atari, that will cost quite a bit for a minimum system.

Those that run NT on a PC will enjoy a system that is slower (for the time being) than Windows 3.1. And what will most people do with this kit? A bit of wordprocessing, a bit of spreadsheeting and a bit of comms. A few will join the Multimedia revolution and produce graphics and sound almost as good as their video recorder can manage.

In the strange world of computers, unlike

any other, we see the components of a system being supplied by two or more different manufacturers, each tempting you with their latest wares. In order to get a widgitprocessing machine, you buy the latest 486 machine from supplier 'A' then you have to find the other half of your package from supplier 'B'. When supplier 'B' tempts you with his upgraded version 5.2 of superwidget deluxe, you find that your super 486 machine isn't quite as super after all, and you really ought to be getting a higher, faster wider one! This is all jolly good business because once you have traded up to your 886 system, Mr Superwidget can sell you his specially developed program that can make it look inferior again...

Car buyers sussed this trick out years ago. You buy the engine and the body from the same manufacturer and you get a total package where both parts work together to form an optimised whole.

It was the integrated nature of hardware and system software that started my interest in the ST. I was about to buy one of the 'new' Amstrad PC1512's just when they hiked the price up to reduce demand. I couldn't afford the machine any more and went back to studying computer magazines. The ST began to look a whole lot more affordable so I bought a 1040 STF (not STFM) with a Philips colour monitor for £750 the pair. What a machine compared with the PC1512. Despite the claims the PC's had lots of software, the ST had excellent software in smaller numbers.

My ST purchase generated the sale of at least five others because I enthusiastically told my friends about the virtues of the machine. The Amstrad was virtually useless without a hard disk, while the ST could run from floppies with ease. Surprisingly the 520ST had more usable memory than the 640K Amstrad, which needed lots of memory to load DOS and GEM. I loved (and still do) the frugal efficiency of the ST which can eke so much out of its resources.

The machine was completely 'compatible' with the PC-GEM systems we were running at work. Most people were under the mistaken belief that you had to use the same processor to be 'really' compatible, but First Word Plus, GEM Draw, Gem Paint and Timeworks DTP all had data compatible sisters on the ST platform. DTP files from the ST could be printed out on expensive Postscript printers at the office. GEM had pre-empted Windows NT by over nine years!

It is silly, though, to compare the old 1040 ST with the current crop of 486's. We should compare them with the TT which none of us bought because we couldn't think of a use for the extra speed and facilities. If the Atari community had been as power hungry as PC users the TT could now be as cheap as 486 machines. Because of their frugal and efficient nature we have been able to produce the goods with machines that appear to be mere toys to our PC and Mac brethren. Our output to laser printers is indistinguishable from that produced by PC's yet PC users have been lured into ever increasing power (whatever this is) for fear of being left behind. The content of Computer Shopper and other advert oriented magazines is dedicated to making you feel that you are losing out.

Strangely, I use PC's all day at work but I don't feel any real need to have one at home (except for my dinky Portfolio). Like many of the contributors to this debate, I have no statistics to back me up but I 'feel' that my Mega STE is actually quicker at 'ordinary' tasks than my 33 MHz 486 running Windows 3.1. OK, so it cannot run the likes of Microsoft Excel or Paradox for Windows, but it just feels snappier when you click on an icon to launch programmes. The windows zip round the screen and there is no hard disk churning swapfiles in and out when you select menu items.

My PC, of course, has only 4 Mbytes of RAM which is derisory in the PC world and a 170 Mb hard drive which is always full. Should I upgrade the RAM to 8 Meg and set up a 2 Mbyte disk cache to speed up my slow IDE drive, or should I get a bit more RAM (another 8 Meg) so I can develop large Paradox applications? But then I'll need another hard drive because I can't squeeze it in.

For backward compatibility, I have GEM 3 loaded on the machine. Now there's a GUI that can make the PC really fly. I wonder why it never caught on? If only Digital Research had got their act together...

I bought my Mega STE last November after waiting patiently for the Falcon to materialise. I'm glad I did and would recommend it to anyone. The extra CPU speed is most welcome along with the excellent TOS 2.06 desktop. I now have 4 Megs of RAM and a 105 Meg Quantum hard drive all in one nice tidy box attached to a much improved keyboard. I have three serial ports to choose from and a PC compatible 1.44 Mb drive. The VME bus slot can be used to plug in all sorts of cards, the most useful being graphics accelerators. My 105MB drive is less than half full even with a spreadsheet, two wordprocessors, a desktop publisher, two drawing packages, paint packages, a few games, lots of pictures, an OS9 development system...

The Falcon is rekindling interest in Atari machines. Now is the time to go out and buy one, buy some software, impress your friends, write to Computer Shopper and PC World and brag about how it is the future in multimedia, music, games, photo CD etc, etc.

The games publishers have already realised that the potential for PC games is limited by widespread piracy. Don't forget, many of the Speccy and C64 owners who swapped pirated tapes in the playground are now doing the same thing in air-conditioned offices with PC's. The publishers will flock to the Falcon, only if they can make some money out of us!

Why haven't I got one yet? Ah, well, I'm waiting for them to make me one in a nice Mega STE box with a 250 Meg SCSI drive in it! I'm not going to give up my separate keyboard and SCSI drive without a fight!

Graham Curtis

Falcon Feedback

Piper - ECTS Report STA 23
John Watkins - Forum STA 24
Britt Johnstone - Forum STA 24
Alistair Bodin - Forum STA 25
John Watkins - Forum STA 25
Phil Hodgkins - Forum STA 30
Alan Chin - Forum STA 30
Harry Payne - Forum STA 31
Peter Robbins - Forum STA 31

I I have upgraded from my TOS 1.2, 1040 STFM to one of the new Falcon030 computers and I have a few problems somebody may be able to answer.

1. Does anyone know of a piece of software capable of editing and creating the new multi-colour, animated icons used on the new TOS 4.0x Desktop stored in the Deskicon.Rsc file? (Icon juggler and Icone don't recognise them.)
2. I have read in articles about the Falcon that in true colour mode there is no palette. What does this mean?
3. I have been led to believe I can turn my memory cache on and off through my control panel in the General CPX. But there is no such option in my control panel.
4. I have MultiTOS V1.04. (Mr Bodin at Atari sent it me when I spoke to him on the phone and subsequently sent him a letter enclosing my Falcon serial number.) Does anyone know how ACC's can be launched from the desktop into the accessory bar? This feature is said to be included, but fails to work. Atari UK say it is possible but they don't know how to make it do this!

I suspect another launch parameter line needs to be added to the NEWDESK.INF file, or slight modification to the MINT.CNF or the GEM.CNF.

Also I have a few recommendations those of you with a Falcon may find useful.

1. MIDI Net, on INF.37 in the ST Club catalogue is very useful if you have a Falcon and an ST with a ASCI hard drive. Using 2 midi cables the Falcon and ST can be linked together enabling access of the ST's drives from the Falcon desktop. Software transfer is slow, but it is worth it for a short time before considering the purchase of a SCSI host adaptor.
2. You may have noticed that few of the clocks that display the time and date at the top of the desktop work correctly. However Date Time on UTI.220 works perfectly in all resolutions.
3. If you have a normal monitor for your ST and are using it on your new Falcon it will give the best (in my opinion) display in NSTC mode (as oppose to the default PAL mode) with overscan and interlace on. The computer can be put in NSTC mode by using a public domain utility called boot config which is available on a Floppyshop disk, UTL 3614. This sets the mode, etc., which the computer boots up on. The NSTC mode reduces the flicker in interlace mode by increasing the frequency. Overscan can also be set in this program but on loading a Newdesk.inf the overscan is cancelled. I have, however, found a way to enable the overscan in the desktop. To do so you must modify your NEWDESK.INF file as follows. At the beginning of the file there is a line starting #E which consists of 10 pairs of characters. To enable overscan on the desktop you must replace the

sixth pair with 6A.
For example if your line reads:
#E F8 03 00 1E 01 0A 00 00 00 00
after modification it will look like this:
#E F8 03 00 1E 01 6A 00 00 00 00

Then save the desktop and re-boot with your modified INF file in the root directory of the boot disc. The overscan is most beneficial in interlace mode where you can have an extra row of icons vertically and horizontally.
4. PageStream 2.2 and 2.1 both work perfectly on the Falcon. But you should use ST Medium, ST High, or 16 colour 80 column interlace mode. Otherwise the compugraphic fonts appear squashed.

That's all I have to say. If anyone wants to contact me for any reason, swap PD programs, general Falcon contact, etc., please write to me at the address below.

David Haider
29 Horne Street, Bury BL9 9BW

● In resolutions that use a palette, the computer sets up a set of colours from which you can chose. To see this in action load a paint package that runs in ST low resolution. True Colour, in theory, allows any pixel on the screen to be any colour. Instead of telling the computer which colour from the palette should be used to colour the pixel, a true colour display will define the quantities of red green and blue that will be used to colour the pixel. True Colour is of course a computer industry lie; there is no limit to the number of different colours in the real world, while in "True Colour" mode the Falcon is limited to displaying up to 65,536 colours selected from 262,144 colours.

I As a newcomer to ST Applications, I notice that many readers seem to be thinking of buying a Falcon, but are asking themselves, as I did, whether all their investment and expertise in ST software will be made redundant. I have just gone through the experience of finding a fundamentally user-friendly machine being sold in a customer hostile environment! Suppliers either do not know, or are not certain enough to wish to commit themselves. Atari UK try to be helpful, but one does get an impression of little communication to (or from) California!

Anyway, for what it is worth, I took the plunge (4Mb RAM/65Mb HD) and find the following: Pagestream 2.2 works well, except for a few spurious screen redraws when scrolling (but at least they are now fast!); Easy Draw 2.35 works, once you work out how to load GDOS (see later) and can tolerate it resetting the mouse doubleclick rate to its fastest (this also happens with the same application running under Neodesk on an ST); First Word Plus 3.20TT seems to work (although Electric Distribution did not claim this, and told me they had no plans at present to support the Falcon), apart from making the control panel inaccessible with a message "Not Enough Memory"; Touch-up 1.80 and a Naksha Hand Scanner seem to work. HiSoft say Lattice C 5.52, K-Spread 4 and Superbase are compatible, apart from a few minor problems they are working on, and I can confirm that all load, and work under fairly superficial testing. Applications which do not work include Polytype Font Designer, Michtron Master CAD, Metacomco Pascal, and a PD version of SPICE.

Now for GDOS. I have installed both GDOS and FontGDOS on the Falcon, and Easy Draw works with either. The problem is to get the ASSIGN.SYS file right, particularly as everyone I asked, and much of the literature, seemed to offer different advice. I include all of "01p screen.sys" to "09p screen.sys" inclusive, although some are for screen resolutions I do not use; the information sent with FontGDOS specifies which driver corresponds to which resolution for ST and TT, leaves three (5p, 7p and 10p) "reserved", and makes no mention of the Falcon - does one draw the obvious conclusion? The leading zero is optional. Also, I have found "0p screen.sys" and/or "10p screen.sys" present in some commercially supplied files (e.g. from Migraph), but these seem to be optional (and irrelevant). Not every driver needs to have a font, though some must, and I think a Swiss font should be included. Comment of the form "; comment" on the same line and following "....sys" seems to work, although I believe the official Atari line is that it is not legal. The main problem was with "31 meta.sys"; here the version "31r meta.sys" found in some commercial products fails totally to load, and must have the "r" removed. The question of fonts with meta.sys is something I do not yet understand. Most applications run happily without; the fonts I have were supplied with K-Spread, which has a facility, which I have never used, to print to a metafile.

To summarise, provided you have a bit of patience, and are prepared to experiment, you can buy a Falcon with some confidence.

Finally, keep up the good work with ST Applications. Have you thought of printing - in translation - some of the reviews from some of the German ST magazines, which are so much deeper and more critical than our own computer glossies (no doubt the result of a much larger market)? I have a review of DA's Vektor of over six pages which is so searching that one is surprised, at the end, to find the programme so strongly recommended - but at least I think I now know what I am buying.

Brian Mulhall

I I finally decided to take the plunge and buy a Falcon. What a lot of money and no sign of MultiTos, Atari Works, etc., etc., but what a pretty desktop! Once set up I had both my Mega STE, which sadly must be sold, and the new Falcon running side by side. I then used Fastcopy Pro with the streamer option to transfer the contents of the Mega's hard disc partitions to the Falcon's. This all went OK.

Trying to copy discs on the Falcon with Fastcopy Pro resulted in two bombs as it started to write to the destination disc, so it does not seem to be completely compatible.

Next to the control panel. Reading the manual there should be a chip select option under General Setup for the cache and blitter. On mine there was only one for the speaker with a space above where it should have been. I then swapped the General CPX file from the Falcon for the one that came with my STE. This strangely produced the cache and blitter options but there was now not one for the speaker. Any ideas?

On browsing through my disc box trying various programs I discovered a disc which although the files and folders were displayed in the window when trying to open a folder or run a program nothing would happen. Trying to "Show Information" on the files and folders produced nothing and attempting to delete one of the folders was met with an "Illegal Action" dialogue or something similar. The disc in question was an ST Review cover disc.

I tried about 30 other discs of various origins and the only ones which did the same were five more ST Review discs. I finally discovered the reason was that the file and folder names contained lower case letters. Using the Mega to change the letters to upper case cured the problem.

Tim Bicknell

Soaraway Falcon?

I Isn't it amazing the things you find in the trash? Just today I found Atari's Confidential Canadian Dealer CPU Price List - obviously the company didn't want anything to do with Atari anymore - so I retrieved it. Well, what do we have here... Falcon030's! Too bad about not having a number of things in Canada such as an Atari service centre, warranty repair depot, Atari product distribution centre, etc. All this is being handled out of head office in Sunnyvale California. Have they forgotten about the Canada/USA border and that we are two separate and distinct countries with different standards and laws? It appears so.

For instance, nowhere does it say on any of the literature that the Falcon030 is approved for use in Canada. You'll need it if you want to sell it in this country. I can of course as an individual buy unapproved equipment, but in the case of an accident my house insurance will not cover it. Kiss your hard earned money goodbye!

Then we see on the price list that all the prices are in US dollars. Lets say we want to get a Falcon with 4Meg of RAM and a 65Meg hard drive. Well, at a MSRP of $1,324.98 (US) that puts it at about $1,589.98 (Canadian) plus 7% GST and 8% PST for a grand total of C$1,828.47. With no monitor yet! You do realize that I can get a 386DX40 system with monitor and Soundblaster Pro, or a 486DX33 system with monitor and CD-ROM plus 2-year warranty, for the same price? What are Atari playing at?

Who in Canada can afford, much less get service for, this wonder (orphan) machine? With no software yet!

I guess that pretty well says it all for the Falcon, Atari and Canada. And this list goes back where it belongs... in the trash!

Douglas Orlowski
Thunder Bay, Ontario, Canada

● Like Commodore, Atari are making a concerted effort to contract their worldwide operations in order to save cash. Just how this ties in with launching 'the world's first Personal Multimedia Computer' is not clear. If Atari branch offices are not feasible, then a professional distributor would seem to be essential to ensure that local markets are pandered to, assuming you can find someone willing to do the job.

Increasingly, the impression is there that the Falcon is a niche product and the real success will come with the Jaguar. Sounds daft to us, tunnelling away at the soft end of the PC market with a Falcon/PC hybrid running Windows and GEM must be a better option than taking on the likes of Nintendo and Sega.

Falcon Software Modem

Q I am also planning to buy a Falcon when (and if) it ever arrives in the consumer case, and would like to know if anybody knows when any software (using the DSP) Fax modems are going to be available in the UK with BABT Approval. I know people are working on them in Germany.

Christopher Cuckow

● Do not hold your breath.

A View of Atari

Jon Marshall - Forum STA 30
John Watkins - Forum STA 31

I Why is it that month after month in Forum I read letters full of rumour, speculation and criticism about Atari and their products and yet never any response from Railway Terrace?

The letters are always lively and well informed and usually constructive and raise point after point that could be laid to rest by the odd comment from our manufacturer.

Surely, this cannot be because none of the Atari staff read Applications? If not then they should be ashamed of themselves. The ST Club is the most interested and loyal group of their users and the software marketed by the Club amongst the most imaginative.

The Club and its supporters are likely to keep the ST going long after the glossies have moved on to more lucrative machines. This being so, a small level of participation from Atari would go a long way to keep interest going and to scotch harmful stories about bugs and incompatibility. Waiting to be interviewed by the media will do neither Atari or us, the users, any good. After all, we all have quite an interest and financial investment in the machine.

Go on Atari, write the odd reply.

John Thiede

● From time to time Atari do reply to matters raised in ST Applications: see this month's News column for our retraction of a misquote from Darryl Still! But when it comes to criticisms of things such as product development, solving technical problems and marketing budgets, it can often be difficult for Atari UK to publicly voice an opinion where the matters are being decided in the USA, or where to reveal the *real* marketing strategy too early in the game could have serious negative commercial consequences. (I doubt that this can be a real consideration: the most damaging things to happen to Atari in recent years have been the Press Releases and speculation they have kindled about new hardware due RSN.)

Who Gives a TOS?

Paul Rossiter - STA 31

I I have just read with interest Paul Rossiter's review of the TOS2 T-Board marketed by Compo and thought that my experience with this upgrade might be worth a mention. My STFM is fitted with an Evesham Micros' SIMM upgrade and has its 68000 processor located under the keyboard fairly near to the MMU. To my dismay, on receiving the TOS2 T-Board I discovered that it could not be installed because it would foul the 20-way ribbon cable connector on the end of the MMU adaptor for the SIMM upgrade.

After some heart searching I decided to attempt hard wiring of the ribbon cable to the MMU adaptor after removing the connector. This was a very fiddly and difficult task and although I succeeded in the end, I'm afraid it was a bit of a messy job. Before attempting the T-Board installation therefore I thought I had better make sure the computer still worked. So I put it back together and switched on. It all seemed to be working and on checking it with Quick Index from DMG.17 indeed everything appeared to be on top line.

I then proceeded with the T-Board installation. Owing to the location of the 68000 processor under the keyboard it is a very tight fit. A rectangular hole has to be cut in the main screening cover above this position to make room for the T-Board mounted on top of the 68000. Also the DIL socket to be soldered on the 68000 must be pushed down fully at the side of the 68000 facing the front of the computer so that it slopes upwards towards the far side. Otherwise the underside of the T-Board will foul chips on the ST motherboard, thus preventing it from being inserted fully into the DIL socket. I accomplished all this but I never got it to work despite lots of discussions on the Compo hot-line!

Soldered joints on the 68000 were checked many times with magnifying glasses and a low resistance meter and were also gone over several times with the soldering iron, but to no avail. On booting up all seemed OK in normal TOS mode but TOS 2.06 would not load, except on one occasion. But then when I tried to load something from disk the computer bombed out. Compo were very helpful and even swopped the T-Board for another one, but there was no improvement.

One thing that worried me a great deal was the noise made by the disk drive when being accessed during the attempt to load. This occurred on either internal or external drive, but Compo reported that the drives do seem to be noisier under this system. In the end I gave up the struggle and Compo very kindly took back the T-Board.

I can only suspect that something in the computer is too near its tolerance limits or has been slightly degraded in performance by my upgrading activities. For the time being I still have a computer apparently working as well as ever, albeit with an empty socket on top of the 68000 processor. The message I wanted to convey, however, is that if your STFM is fitted with an Evesham Micros' SIMM upgrade, installation of a TOS2 T-Board is a daunting task probably best avoided.

K Hellawell

MIDI File Formats

P Waldock - Forum STA 31

I The biggest problem seems to be that no two programs use the same format! Mostly they have their own - perhaps it's just the PD/Shareware/coverdisc software which is all that I can afford, and my problems would be solved if I lashed out £450 on a top-of-the-range package. If anyone knows the details of any of these arcane formats, I for one would be very grateful to hear from them. I have a complete decode of the format used by the PD sequencer on disc MID.06 to contribute. Incidentally, I wrote to the author in Canada and enclosed my Shareware fee, but have heard not a word from him in over 12 months. I have a copy of the official definition of standard MIDI files v.1.0, from the International MIDI Association, but it doesn't help with these funny formats.

A related problem which I have, which is perhaps in Jon Ellis's field, is that of writing a 'proper' program (i.e. one which reacts in real time to external events such as key presses and mouse movements) which will react also to incoming MIDI events, and time them over extended periods (minutes) to the required accuracy (1/3000 sec.).

I use a procedure call evnt_multi (I know, it's Modula-2, why can't I write in C like any self-respecting programmer?) to do the reacting, but apparently it doesn't know about MIDI events, and I haven't been able to find anyone (including Hisoft and Atari UK) who knows how to program the timer to achieve what I want. I'll learn C and 68000 Assembler if necessary, if someone can tell me how it's done. Resource files and Window management I can handle.

If people are interested in communication standards, you might consider commissioning an article on the ISO Seven Layer, Open System Interconnection, Basic Reference Model (ISO 7498). It may seem a bit heavyweight for individuals working on their own, but it is very helpful in clarifying the various levels at which communication standards are required, e.g. for file formats and inter-machine data exchange.

Alan Price

Direct to Disk

Peter Jury – Forum STA 28
Martin Howard – Forum STA 31

I Alas, Martin Howard, you appear to have fallen into a very common trap, a misconception that direct to disc recording is the same as using a computer to drive MIDI-linked sound generation modules. I hasten to respond with some basic definitions and descriptions before other readers are misled.

Direct to Disc is a term used in the audio industry to describe a method of recording sound onto computer type storage, i.e. hard disc, optical disc, rather than on to tape. The sound, of necessity, must be in digital form, the minimum standard being that used for Compact Disc and DAT (Digital Audio Tape) systems. The encoding method is called Linear PCM (pulse code modulation), sampling the audio at 44.1 kHz and defining each sample as a 16-bit word. Most audio is stereo, of course, so multiply that lot by two and you will arrive at a little over 1.4 Mbyte per second! To the audio are added various control codes and flags, parity bits for error correction and other oddments, and we get the rule-of-thumb figure for digital audio storage of 10Mbyte per minute. A compact disc can store over an hour of audio at that rate, and it is not much bigger than a floppy – makes you think doesn't it! Some professional audio workstations operate at 20-bit and even 24-bit per sample, increasing the storage requirements much further.

Now our humble ST, with the right interface, can communicate these audio digits in and out of its cartridge port, and with suitable software running can stick it on to the hard disc, cut it up in bits to one sample accuracy and put it together again in different ways, or turn the volume up and down. Note, however, that these sound files are LARGE. 10Mbytes per minute – there is no getting away from that. OK you may say, use some kind of data compression. The newly arrived domestic audio formats of DCC and Mini Disc use data compression and pack a great deal into a small space, but as soon as you do that the system is no longer 'transparent'. What comes out eventually is not exactly the same as went in and that is no use for a professional recording and editing system. How long is an average piece of music? Three minutes, four minutes, possibly more, so there is the 40Mb drive overflowing already. Absolute maximum time on a CD is 80 minutes so to edit a complete master for that would require at least 800Mb and 1Gb would not be too much as it would allow a bit of extra room for manoeuvre.

Surprisingly, the old, slow ST can do all this and do it very well. I know of two programmes for audio recording and editing on the ST. One I wouldn't touch at any price, the other is superb and will do things that some of the more modern audio workstations couldn't attempt. Take this for example – you have two takes of the first movement of a Beethoven string quartet. The second take is pretty good and that is the one to use on the finished CD but there is one pizzicato violin note which is not acceptable. That note is fine in the first take and the old, slow ST will allow me to pull that ONE NOTE out of Take 1 and put it into Take 2 in place of the naff one which is there – and you will never hear the joins! The Falcon should be even better when, and if, it and the necessary software become established.

Now Martin, what of the system you propose? I will agree that it may be cheaper, but probably not much. Midi keyboard, midi guitar controller, midi sound module, they all add up. Would you care to put prices on the hardware? – and on the software? However, what it most definitely is NOT is a direct to disk audio recording system and here is the acid test – Can you record real musicians, playing real instruments, strings, woodwind, brass, etc., and edit the results? Can you record the actual performance of, say, a 100-piece symphony orchestra and edit together a CD quality recording from several takes? Note – an actual performance by a particular group of musicians, not an assembly of instrumental sounds triggered out of a sampler by your ST.

What you have described is a system for constructing music from sounds stored in, or generated by, various MIDI-driven sound modules. MIDI is merely a fairly simple serial data interface which the ST can understand, and which instructs musical hardware which notes or stored sound samples to play, for how long, how loud, and so on. The MIDI files your ST handles and stores on hard disc are miniscule compared to real digital audio sound files and so a 40Mb drive is adequate. I do not denigrate your system. It is a valuable tool of the sort used by many composers and songwriters but it is NOT direct to disc recording and no one should believe that it is. The Falcon, we are told, has direct to disc facilities built in, i.e. phono sockets to put the analogue audio into and the necessary A to D and DSP chips to manipulate it. It will also handle MIDI data and drive keyboards, generator modules and samplers, but the two techniques are completely different.

Finally, what is this 'flat sound' which you seem to imply goes hand in hand with direct to disc recording? The ST which is typing this has just finished editing a CD master which includes a 46-piece brass band and an 85-strong choir, the Treorchy Male Choir no less, all performing in Winchester Cathedral, and there is nothing 'flat' about that, either musically or acoustically.

Peter Jury
Sarum Sound Recording
and Production, Salisbury.

Pardon?

Anon – Forum STA 31

A The reader having trouble with a spurious green elf in Gauntlet II might try unplugging his/her printer before loading the game. I believe this game uses the printer port, through a special interface, to allow an additional two joysticks to control extra characters – hence the problem.

Andrew South

PS. I don't play computer games either. Honest.

MIDI to Analogue Mechanical Decoder

Q I have over the last year or so developed and built an electronic Piano Roll Translator (for want of a better name). Basically this allows 65 or 88 note paper pianola rolls to be played and loaded into my ST as standard midi files (.MID). This is achieved by interfacing the translator with my old but extremely versatile Yamaha PSR60, which in turn is coupled to the ST in the normal fashion.

The aim of all this is to be able to play paper piano rolls in the form of fairground or street organ style (after suitable manipulation in a sequencer – I use the very simple but effective Sequencer One).

Now the problem! Can anyone out there help me with designs or ideas for a MIDI to analogue mechanical decoder? To encode MIDI is reasonably simple – a design was published in the Maplin magazine a few months ago. So far I have not been able to find a way of converting simple MIDI note on/off information back to a mechanical movement; solenoid operation would be ideal. In this way the sequenced songs could be made to play any suitably modified piano/organ, etc.

If anyone has any ideas and/or design information using readily available components, or even using a modified MIDI equipped keyboard plus mechanical translator, I would be extremely grateful and would of course reimburse any reasonable costs involved.

I would also be interested to hear from any other enthusiasts who might want to build a similar set-up. My progress to date might well be suitable for an article in a future STA, who knows?

Alan Barnes

3D Calc

E Mills – STA 30

I I bought 3DCALC when Microdeal were offering it for £10 or so and, like Evelyn Mills, found it an attractive package, but it is marred by some serious flaws which only become apparent when you start to construct real spreadsheets of some size.

The worst is its way of handling re-calculations. 3DCALC seems to calculate only the formulae visible in the active window and forgets the results when you scroll: with auto-calc on, it has to calculate the newly revealed cells, which in a formula-intensive spreadsheet is very tedious; if auto-calc is off only the formulae are shown until you press re-calc and this has to be repeated whenever you scroll.

There is no way of locking rows or columns so that headers are always visible and no way of limiting the window range. The vertical slider always shows the whole 2048 lines on each page; if you are working in the top 100

rows or so the slider barely moves from the top making scrolling up by the screen impossible.

When rows or columns are inserted, formulae are not updated.

The lack of Lotus export is a limitation as is its rather fussy way of parsing imported Ascii text by field length rather than tab or comma delimitation.

This is pity as its unique 3D features, its ability to run as an accessory and integration with text and communication functions, are all admirable. With K-Spread in limbo pending Hisoft's long-promised recompilation there is an opportunity to move in on a rather thin ST spreadsheet market. How about it, Microdeal?

Alan Kennedy

● The future of 3D Calc must be in doubt now that Microdeal have been bought up by HiSoft.

Dream Team Support

I Any users of Didot or Retouche wishing to pool their experiences, knowledge and possibly resources with fellow users of the above software are invited to form with us a Didot User Group dealing with the use of the above software in the United Kingdom. We have been registered users of Didot Professional B/W for approximately six months and also use Retouche. We use Didot for our living but we suspect that other users may have problems or are on a slow learning curve (which we feel we can help with).

In days gone by companies or individuals trading in the same line of business used to assist each other - we feel that this is no longer the case and especially in businesses using high technology certain information is kept very close to people's chests.

We would intend to release a User Group broadsheet every quarter dealing with users' experiences, tips, suggestions, etc., up and down the country. For instance, a fellow user we know of bought Didot Pro B/W in July 1992 and it took him three months before he could find a PostScript Bureau willing to spend time with him to solve various problems. One problem was that certain PostScript files generated, failed when they were output to a Linotronic 300 but worked perfectly well when output to a PostScript Apple Laserwriter. The problem was eventually isolated to the use of certain public domain typefaces. The PostScript driver used in Didot only created a 'character description' in the PS file where a character was used in the text frame. However, although character 252 (per hundred) was not used in any of these cases a character in the PS file was always generated for it. In the cases where output failed, a typeface was used which did not have a character defined for it. The problem was solved simply by creating a character in that position using the Didot font editor - the character was defined as a simple box. Now the bureau can output our imagesetting to film or bromide while we wait.

This and many other problems have now been resolved - so will any Didot Retouche Users willing to form this User Group with us please write to me c/o Swift House, Manor Farm, Upper Stondon, Beds SG16 6LJ.

Peter Restall

UNLZH

I In registering my copy with the author and acquiring the ACC version, I asked Thomas Harris if he planned a version to support lzh5, the new version of lzh now used by some bulletin boards. (ST Club's DMG disks use lzh1.) He replied he would be delighted to do so as it would be three times faster but was unable to find the algorithm, except in C, with which he was not sufficiently familiar to interpret with confidence. Can any reader help?

Alan Kennedy

I I have discovered that the uncompressing of the Diskmag LZH files isn't compatible with the presence of FSEL.ACC (supplied by Compo with their Write On Word Processor).

If this is present, UNLZH.PRG produces decompressed files with 'bad CRC' messages alongside which do not run. Removal of the accessory cured the problem.

Dr. Swithinbank

LHARC and Destinations

Niall Grimes - Forum STA 29

I I usually cheat and use a shell, or for extracting, UNLZH, so I have not encountered any problems with getting LHARC to accept a destination path, but UNARC.TTP and the self-extracting files found on cover disks always extract to the current directory. In GEM terms the current directory is the active window on the desktop and the one from which programmes are normally launched.

In a command line environment you could run a programme not in the current directory as follows:

C: * set current drive
cd \folder * set current path
A: archive.tos * run self-extracting file from drive A:

The archive will extract itself to C:\folder.

The same effect can be achieved on the Atari desktop using the right, or cinderella, button:

* Open programme and destination windows;
* Click on the destination window to make it active;
* Move the mouse to the window where archive.tos, UNARC, LHARC, etc., are;
* Holding down the right button, double click with the left.
* If using LHARC enter the source path name in the parameter line.

This technique comes in useful at other times: you can make the file selector appear in some deeply nested path instead of clicking up and down the directory tree. Path names in TTP programmes can be shortened or omitted similarly.

On the other hand, programmes that look for resource or other start up information in the current directory can come unstuck, though even this can be useful for running a programme that has somehow become detached from its RSC file.

Alan Kennedy

Calligrapher and FontGDOS

I The version of FontGDOS you supply on Disk GDOS E causes Calligrapher Lite to explode in your face if you try to use it instead of the version of GDOS supplied with the program. Similarly, the DJ5.SYS printer driver supplied with FontGDOS is incompatible with this version of Calligrapher. It's a pity that this is so as I an now a registered Calligrapher addict, with withdrawal symptoms and everything, and the extreme 'slowth' of the laser driver I'm using at the moment is driving me nuts. Maybe those nice people at Working Title will do something about this in the future and release an updated version which is compatible with FontGDOS.

Incidentally, this letter was written using Calligrapher Lite and Monsal 12, converted from a Signum font, using Jeremy Hughes's excellent Fontkit 3. I wish he'd do one for vector fonts!

John Brighton

● Monsal already exists as a standard GDOS typeface on disks FAD.50, 51 and 54.

Crack Art

I I have just become a registered user of Crack Art v1.36 available from Floppyshop on disk ART.71C which includes 120K of English instructions that are essential reading if the full power of the program is to be realized. Although it is a major update to v1.0, it has several restrictions which can only be removed by sending a registration fee of DM30 (about £12) to the authors in Germany. It's not often I feel compelled to register shareware as my interest in Atari computing is mainly for entertainment, but Crack Art is so good I felt duty bound to support the shareware principle and send my donation. For a low-rez art program that has all the best features (and more) of Canvas, Neochrome, Degas, HyperPaint, Deluxe Paint, etc., rolled into one, £12 isn't much to ask!

The English documentation is a translation from v1.25 dated August 1992 and at that time the authors had received one registration from the UK despite a 'rave review' in the July 92 issue of ST FORMAT where it was awarded 94%. One reason for the lack of UK support could be the cost and hassle of sending small amounts of money overseas - something which is never mentioned by PD libraries or the mags. For example, the NatWest

charges £12 for a foreign currency cheque or £3.50 for any amount of cash. A registered letter would be a sensible precaution for sending cash which costs £2.21 within the EC. Sending a personal cheque or sterling is OK but bear in mind that the recipient will have to pay similar charges for conversion to their currency. The most cost effective method would be £15 cash by registered post at a total cost of £17.21, but in the event I took the most convenient approach and sent a personal cheque for £20 which after charges boils down to about DM30.

It could be argued that £20 is paying over the odds for a shareware program but after using CRACK ART for a few weeks I have no regrets. It appears to be totally stable, bug-free and bomb-proof as well as being stylish and fast, the BMW of art programs! Nothing is perfect though, and CRACK ART is no exception with its lack of STE palette support being the biggest disappointment. I hope the authors, Detlef Rottger and Jan Borchers, will include an STE option in the next version, encouraged by sackloads of registrations.

Stephen Aizlewood

● If you are planning to make a number of payments within Europe, or take a holiday there, it is cheapest to buy a book of Eurocheques from your bank. Crack Art is on ST Club disk DRG.50.

Drive Dilemma

Q My B drive has its own unswitched power supply built into a 13A plug which occupies a socket on the distribution board and so comes on, before everything else, when I close the main switch. Does this matter and does it matter whether or not a disk is in place?

Ideally, I would like to run the second drive from the internal power supply of my ST1040; would this overload it?

Rex Boys

● You should turn peripherals on before turning on the computer so there is no problem with this aspect of you setup. Powering the second drive from the ST is possible, but hardly worth the effort. Some batches of ST power supply units are pretty fragile.

A hole too many?

I I have a 1MByte STe, second drive and a mono monitor. Whenever I insert a 720K format HD disk into the external drive I cannot read the directory (all other disks read OK). The same disk can be read fine in the internal drive. Could it be the HD hole that is throwing the external drive?

Steven Holmes

Copyright on Illustrations

I My attempts at drawing are generally compared unfavourably with the meanderings of a drunken spider, so for almost any illustration in my computer use I have to rely on artwork from other sources. While there can be little risk in using an item merely for family and friends, it seems to me that if posters are to be produced, or items subsequently distributed or sold, rather more care must be taken. Does anyone know the copyright position?

If disks of clipart are purchased from a commercial source, or as part of an art or DTP package, I assume that the purchase confers full rights to use the clipart. I suspect that the position is considerably less straightforward on Public Domain disks, as the original source for such material is often unclear. To give a particular example, ST Club disk SSM.38 contains some very nice scanned images of teddy bears(!), but there is no indication on the disk of where the material was scanned from. Items which include, for example, Garfield cartoons or Disney characters presumably still belong to the creators - or does this depend on whether they were scanned or drawn by the contributor?

Simply scanning someone else's work from the printed page is, I would guess, as much an infringement of copyright as photocopying. What, though, if one uses a scan as the basis for one's own work, in the same way as one might copy or trace a picture? Would the result be free of restrictions?

Andrew South

● In the absence of any copyright or distribution conditions given on the disk, you can be pretty sure that you can do whatever you want with the images supplied on our clip art disks. If you scan an image then, unless the work is out of copyright or you have the copyright holder's permission, you are probably in breach of copyright law. Using the image in any public way would probably be enough to prompt a complaint from the copyright holder.

Whether an image based upon another image is free of infringing copyright is a matter the courts would have to decide. Andy Warhol had to pay Campbell's Soups for the right to use their can design and trademark!

GNU C++

I Readers may have found that they are unable to use the 'dec', 'hex' and 'oct' manipulators in the iostream library. The linker complains that the required '<' operator function is undefined.

After much head-scratching and experimentation I have discovered that the thing to do is to comment out the line '#pragma interface' in the iostream.h file. This #pragma is supposed to save space, but on this occasion it causes the compiler to forget about an inline function, leaving the linker to search for it in vain in the library.

Alwyn Thomas

Keyboard Tutor

Q I am trying to learn to touch type and am having difficulties with the Mavis Beacon program. It does not have a configuration option for non-US keyboards and has decided that I am having difficulty with the symbols keys and keeps offering me exercises on them to improve! Does anybody know of a good touch typing tutor that will work correctly with a UK keyboard?

Christopher Cuckow

Ghostscript

Q After reading about Ghostscript on the CAD page of STA 29 I ordered it from the ST Club, and have found that it produces excellent results on my Canon BJ-10ex. However, I have discovered that many PostScript files assume a page size of 8.5 x 11 inches, which is slightly larger than the area my printer is able to print on an A4 page. Selecting the appropriate page size in the GhostScript command line simply crops the page to fit, rather than actually rescaling it. Does anyone with a knowledge of PostScript know if there is a simple way to scale the output to fit on a smaller page? (This would also be useful for previewing pages at a reduced size to save paper and ink.)

I would like to use PostScript fonts with TeX, using GhostScript for output. I have the CS implementation of TeX, from disks PDD.90-95, which includes a PostScript driver, and I have PostScript fonts in abundance; but does anyone know where I can get an executable program (as opposed to source) for converting PostScript AFM files to TFM files for use with TeX?

Oliver Broadway

● The page size for a PostSript file is set by the application that generated the file. I presume that the files that you are printing are example PostScript files originating from the USA rather than ones that you have generated yourself. There is nothing that we know of for the ST that will allow you to scale PostScript files.

Printmaster and DeskJet

Q I have an HP DeskJet 500 printer and have found it impossible to obtain a print out from the poster/stationery design programme: Printmaster. In order to solve this problem (and others regarding printer drivers) I have just invested in an Epson FX80 Emulation Cartridge which I hoped would solve all my problems. I now find that when I use it with Printmaster, all I get is a continuous printing "on the spot" of one line over and over. This, as you can image, is very frustrating, having gone to the expense of purchasing this cartridge only to find I am still having the same trouble. Furthermore, I have found it impossible to get help from any of the local suppliers as they don't seem to have had experience in this respect.

I shall be much obliged, as a struggling beginner in the world of computers, if you are able to give me any help.

B D Hawer

Programmers' Forum

In this month's edition of ST Applications' regular programming column, we take a detailed look at the GEM bit image (IMG) file format, and consider other odds and ends in passing.

Graphics files and window handling

Cyrille Brisebois writes from Glasgow, with a question about bit image files:

I am endeavouring to transfer 41 volumes of Chess Informant (each containing approximately 700 chess games) onto a chess database by writing my own optical character recognition program in GFA BASIC. This is to save astronomical costs as such a database is commercially available.

I have had a fair amount of success using the Dataascan Matador 105 Scanner, but I am limited to working on just a screenful of material scanned as a DEGAS PI3 picture at 200 dpi, and such a picture does not represent a big enough portion of the page. Indeed, saved as a 32K file at 200 dpi, such a picture barely covers a quarter of the page and a third of a game!

The GEM .IMG format would be ideal, as I can scan and save a large enough portion with my scanner in this format, but I do not know how to load it back using BASIC or assembly language so that my OCR program can manipulate it as a whole image. The GEM .IMG saved by Dataascan is in a compressed format, which is complicating things a bit further, as far as I am concerned.

Is there a way of loading a large GEM .IMG picture in compressed format (over 100k) with BASIC (any BASIC, although I am using GFA version 3+) and how is it done? Once loaded at a certain memory location, can this picture be manipulated, even inspected?

This sounds like a substantial programming project. Cyrille is quite right that the IMG file format would be preferable to the simpler DEGAS-type formats. IMG files are not limited to the dimensions of the standard ST screen, and can achieve significant space savings through the use of a moderately efficient compression system.

Before we can make a start on writing any software, our first step must be to review the IMG file format. Full details can be found in the Box.

To make something more generally useful out of Cyrille's original question, I have chosen to produce a program that allows the user to load and view any monochrome .IMG file. Large images are displayed in a standard window which may be scrolled over the image area using the standard arrows. This should also be of interest to a couple of readers who wrote in some time ago with requests for a simple example of window-handling code (**Graham Ling** from Bromsgrove, and someone with an indecipherable signature from Manchester). Assembly language is not suitable for this purpose, and I do not use GFA-BASIC, so Lattice C will have to suffice. The source code for this program, IMGVIEW, is presented as Listing 1.

The IMGVIEW program

Starting at the top of the listing, the first feature of note is the large structure type IMG_FILE. This is used to pass a complete description of a loaded IMG file around between functions. The first few fields are identical to those that form the IMG file header block. The remainder contain useful derived information about the file, and pointers to various blocks of data.

The macro function make_pxy() is used as a shorthand for converting between the format used by the AES to specify a rectangle (x and y coordinates of the upper-left corner, width and height), and that used by the VDI (x and y coordinates of two opposite corners, in this case top left and bottom right). The first argument is taken to be an array of 4 words into which to write the coordinates of the corners.

The main() function handles initialisation, and normal termination of the program, and presents a simple alert-driven user interface. The load_file() function processes a file selector interaction to locate an IMG file, and then invokes read_IMG_file() to load the data. The IMG file is read in two or three chunks.

First, the eight word header block is read into the IMG_FILE structure. This information is used to guide subsequent processing. If the file contains an extended header block, a memory buffer is allocated to hold the remaining header data. IMGVIEW does not attempt to process extended headers in any way.

The final chunk of data, the compressed picture itself, is then loaded. The amount of space required to hold the image is calculated by subtracting the size of the header block from the total size of the file. The file size is ascertained by the fseek()/ftell()/rewind() sequence at the beginning of the function. read_IMG_file() finishes by calculating the width of the image in whole words and bytes. These values will be useful later.

Simple error handling is done by the image_error() function which is called with an error code. It checks the range of the input code, and selects an appropriate alert box for display. The program is then terminated safely.

The detect_IMG_packed() function provides a quick check on whether the image data is compressed or simply encoded in the bit stream format (see Box). This information, along with other parameters derived from the header block is summarised in a short report displayed in a window by describe_IMG_file(). This function calls make_window() to create a window of fixed size. Text is then printed into this window using v_gtext(). The function waits for the user to click on the window close box, before closing and deleting the window, and returning.

The unpack_IMG_file() and unpack_scanline() functions form the core of the program. The header block information is used to calculate how much space is required to hold the unpacked data. Note that the width of the unpacked image should be padded to the nearest byte boundary, because the encoding method is byte-based (see the Box for more details). In fact, to make displaying the unpacked image easier, I have elected to pad each line to the nearest word boundary. After successfully allocating memory for a scan-line workspace and for the unpacked image, the function simply steps through the data block, calling unpack_scanline() to decode single lines into the workspace. This is then copied into the output buffer, possibly several times if the scan-line data was preceded by a replication record. Several internal checks are incorporated to ensure that malformed IMG files are trapped without crashing the program.

Unpack_scanline() reads data records, determines which of the three storage methods has been used, and then unpacks the data into the workspace buffer. It terminates when it has processed sufficient pixels to create a scan-line.

The final function of substance is that which makes the unpacked file visible: display_picture(). It starts by determining how big a window would be required to show the image. If possible, the whole image is displayed in a window, positioned at the top left of the screen. In this case the window lacks scroll bars, and the only available user interaction is to remove the window by clicking on the close box. Larger images are displayed in windows with active scroll bars. To actually write the image from the memory buffer to the screen, the VDI blit function vro_cpyfm() is used. For a simple introduction to vro_cpyfm(), see last month's Programmers' Forum.

By clicking on the various scroll bar gadgets, the user can move a window-sized rectangle over the image. After each movement of the rectangle, vro_cpyfm() is used to update the window. display_picture() illustrates how to calculate the size and position of scroll bar slider boxes. A more complete display function would allow the user to move and resize the display window, as well as making provision for the possibility that the desktop may have other active windows, necessitating processing of redraws and topping messages.

To end with, a word of caution: page-sized, high resolution IMG files are big when they are unpacked. An A4 page scanned at 300 dpi requires about one megabyte of memory!

Footnotes

The decompression routines, unpack_IMG_file() and unpack_scanline(), could (and probably should) be recoded in assembly language for increased performance. Those with an interest in viewing or printing graphics files of various formats should not fail to investigate Jeremy Hughes' excellent Imagecopy 2 program, which does all of this and more.

As it stands, the program does not attempt to process colour (multi-plane) IMG files as these are rather complicated. Readers with no taste for one of the convoluted parts of the VDI interface might like to skip the following two paragraphs.

Colour IMG files differ from the simple IMG format described in the Box in two respects. First, the file includes data for each screen-plane separately. Each scan-line item contains pixel data for the first plane (considered to be 'red' in the VDI world), followed by data for the 'green' plane, then that for the 'blue' and so on. The whole sequence of planes is then repeated for the next scan line. After uncompression, the plane data would have to be shuffled around so that all the data for a plane is in one contiguous block. The array of blocks can then be blitted to the display window using the 'standard form' format option, as opposed to the 'device-specific' option used in Listing 1.

The second difference lies in the specification of palette data. The IMG header block makes no provision for information. Various competing standards have been proposed, with no clear winner. One variant uses an extended header block, with 16 words representing the palette colours.

Porting Listing 1 to non-Lattice C compilers should be easy. In the listing, 'int' and 'long' are 32 bits wide, 'short' is 16 bits. To save space, the read_IMG_file() function reads the 8 words of the standard IMG header block directly into the IMG_FILE structure. This makes the assumption that the first eight fields of the structure are physically implemented as eight contiguous words. This will fail on compilers which pad structure elements to longword boundaries. A more correct (and portable) technique is to read each word individually into a temporary variable, and then to assign the result to a structure member. All library functions used by the program are either part of the standard ANSI library or the ST GEM library, with the exception of getcd(), which obtains a copy of the current directory path, including the drive letter.

Request for help

Whilst on the subject of graphics formats, does any one have something that might help the minimally-named **Thomas A** from Belgium:

I'll be as short as possible: How does one decompress a Tiny picture file? An (100%) assembly language example program which can decompress low, medium and high resolution Tiny files will be most welcome.

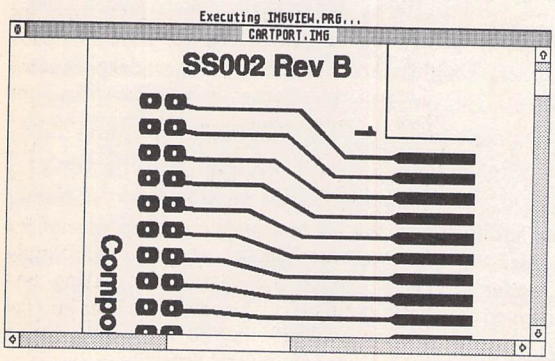
The only reference I have to the Tiny (.TNY) file format is in the compendium of ST graphic file formats referred to earlier. Although the task looks reasonably straightforward, without any Tiny pictures with which to test a routine, any program is likely to be a rather tentative solution.

Thomas goes on to pose another question:

How is one supposed to write programs for the DSP chip in the Falcon ?

This is a little easier. As part of the new Doc-Support VI package recently announced by Atari, they provide software tools to write and debug DSP code. The bundle of Falcon programming documentation and the software costs £49.95 including VAT and UK postage. With particular reference to Thomas, I've no idea whether Atari Benelux can supply the package (or even whether they still exist). Atari UK can be contacted at:

Atari UK Ltd., Atari House, Railway Terrace, Slough, Berkshire SL2 5BZ.



◁ Figure 1

The IMGVIEW program in action. The program has loaded a large IMG file (2480 by 3508 pixels), and is displaying a small portion of the image on the screen. The 'view-port' can be moved over the picture using the window scroll bars.

Figure 2 ▷

```
IMG Report
Filename: CARTPORT.IMG
IMG format version: 1
Monochrome bit image
Image resolution = 299 dpi
Image size: 210 mm wide x 298 mm high
            2480 pixels wide x 3508 lines high
File data block: 17709 bytes
Image packed to 1% of original size
Memory required for unpacking: 1087480 bytes
```

IMGVIEW's report on the IMG file displayed in Figure 1. Notice how much memory a large (A4-sized) high resolution (300dpi) IMG file requires when unpacked!

Next Month...

...Programmers' Forum will include readers' recommendations for books and software for learning programming. There should also be space for the usual mix of questions and tips from readers' letters.

Keep the letters coming in - the more we receive, the better the column gets! Hints on any subjects, or questions about programming problems, should be sent to the address below. All contributions, no matter how simple or advanced, are most welcome. Please include your address on the letter, so I can get back to you if anything in your contribution is unclear. Email addresses are useful too.

Please send a disk (or email) if there are large chunks of text or ASCII source code: I have no time to retype lots of material. Naturally, disks will be returned if an SAE is included.

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jonellis@cix.compulink.co.uk
(everywhere else)

The IMG File Format

As has been mentioned before in *Programmers' Forum*, an invaluable source for information on the IMG and many other ST picture file formats is a document compiled by David Baggett of MIT. This is updated occasionally and is available on the Internet. In the case of the IMG format, Atari also provide a rather formal specification in the VDI programming manual released as part of the DocSupport III package (see STA 16 for a review).

The IMG file is made up of two parts, a header block, and a much larger data block. The header block is made up of at least eight sixteen bit words:

Word	Meaning
0	Image file version number, usually 1.
1	Length of header block in words, usually 8.
2	Number of planes of image data. Monochrome IMG files have a single plane, colour files more than one.
3	Length of a pattern in bytes (see later).
4	Width of a pixel in micrometres.
5	Height of a pixel in micrometres.
6	Width of a scan-line in pixels.
7	Number of scan-lines in image.

Programs that handle IMG files should always use word 1 to determine the length of the header block, and not rely on it being 8 words in size. Some IMG files, particularly multi-plane files may use an extended header block to store information such as a colour palette.

Words 4 and 5 can be used to calculate the resolution of the image in dots per inch (dpi). Since there are 25400 micrometres per inch, the resolution in dpi is simply equal to 25400 divided by the value in word 4 (or word 5). Also, the dimensions of the image can be obtained using the following formulae:

Width in millimetres = word 4 * word 6 / 1000
Height in millimetres = word 5 * word 7 / 1000

The 'Report' option in the IMGVIEW program decodes the header block to display details about the image encoded by the IMG file (Figure 2).

After the header block, there is a variable number of data bytes. This data block is made up of scan-line items, each of which encodes one complete row of pixels in the final image. The pixel data for a scanline may be preceded by a replication record:

byte 0: 0x00
byte 1: 0x00
byte 2: 0xFF
byte 3: n

which indicates that the following scan-line data is to be repeated 'n' times. This allows blocks of identical scan-lines to be encoded in an efficient fashion.

Pixel data making up a scan-line is represented in one of three ways. All the encoding methods work on a whole byte basis, where one byte specifies 8 pixels. This means that for coding purposes, an image is always treated as being an integer multiple of 8 pixels wide. Images of other widths are considered as having been padded with pixels at the right-hand border to reach an 8 pixel boundary.

A solid run record is used when there is a line of pixels all either set to 0 or to 1. The number of pixels must be an integer multiple of 8. The record is a single byte. The lowest seven bits indicate how many bytes of pixel data are specified by this record. Since there are 8 pixels per byte, a single solid run record can define 8 to 1016 pixels. The high bit of the byte indicates whether the pixels are on (bit set to 1), or off (bit set to 0).

A pattern run is used when, although there is some repetitive element in the scan-line data, it cannot be encoded as a solid run record. As an example, consider a dotted line, where alternate pixels are on and off. To encode this, the line is considered as being made up of repeats of a short pattern. The length of the pattern in bytes is specified by word 3 of the header. The record for a pattern run looks like:

byte 0: 0x00
byte 1: Number of times to repeat the pattern (1-255)
byte 2: First byte of pattern
byte n: Last byte of pattern

Most IMG files seem to be constructed around a pattern length of 2 bytes, although the standard allows patterns between 1 and 8 bytes in length.

Unlike the previous two methods of representing data, the final option does not offer any compression. Pixel data which is highly variable, with no periodicity, is simply included verbatim using a bit-stream record:

byte 0: 0x80
byte 1: Number of bytes of verbatim data following (1-255)
byte 2: First byte of bit data
byte n: Last byte of bit data

Some early programs used only the bit-stream encoding system to write lazy-man's IMG files, sometimes called 'uncompressed' IMG files. This may have saved the programmer some effort, but it is at the expense of the user's disk space. To illustrate the utility of the compressed encoding techniques, consider a simple bit image: a black rectangle 120 pixels wide and 50 lines high. Encoding this using the bit stream system would result in an IMG file of 866 bytes (16 bytes of header, 50 bit stream records, each of 17 bytes). Utilising all the compression options, the file could be reduced to 21 bytes (16 bytes of header, 4 bytes indicating a scan-line replication count of 50 lines, and a single byte solid run record covering a whole line of 120 pixels: 0x8F).

Obviously this example is somewhat contrived, but it serves to underscore the importance of using the full range of possible encoding techniques. On real data files, particularly those incorporating lots of white space, some impressive compression ratios can be obtained. Figure 2 shows a report generated by IMGVIEW on a large IMG file, where the compression ratio was almost 100:1.

Listing 1
=========

```
/*************************************************************
**                                                          **
**                Monochrome IMG File Viewer                **
**                ==========================                **
** (C) Jon Ellis, 1993  All commercial rights reserved      **
**                                                          **
** Program showing how to load single-plane (monochrome)    **
** .IMG files, uncompress them and then display them using  **
** a scrolling window interface.                            **
**----------------------------------------------------------**
** Creation: v1.00  04/06/93 JHE                            **
**----------------------------------------------------------**
** Filename: IMGVIEW.C        Version: 1.00  Date: 09/06/93 **
** Compiler: Lattice C v5.52  Options: -cargfku -ms         **
*************************************************************/

#include <aes.h>
#include <dos.h>
#include <osbind.h>
#include <portab.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <vdi.h>


/*
** Define symbols for error handling and
** other explanatory constants.
*/

#define BITS_PER_WORD           16

#define IMGERR_FILE             1
#define IMGERR_HEADER_FILE      2
#define IMGERR_EXTHEADER_MEM    3
#define IMGERR_EXTHEADER_FILE   4
#define IMGERR_PACKED_MEM       5
#define IMGERR_PACKED_FILE      6
#define IMGERR_POINTER          7
#define IMGERR_UNPACK_MEM       8
#define IMGERR_UNPACK_COLOUR    9
#define IMGERR_UNPACK_BOUNDS    10
#define IMGERR_UNPACK_FORMAT    11
#define IMGERR_WINDOW           12

#define VERTBAR (UPARROW|DNARROW|VSLIDE)
#define HORIZBAR (LFARROW|RTARROW|HSLIDE)

#define PAGE_INCR               80
#define LINE_INCR               8


/*
** Structure representing the IMG file header
** block, and pointer to the data area.
*/

typedef unsigned char byte;             /* 8 bit unsigned quantity      */
typedef unsigned short word;            /* 16 bit unsigned quantity     */

typedef struct {
                word if_version;        /* Version number of file       */
                word if_hdrlen;         /* Length of header block       */
                word if_nplanes;        /* Number of planes in header   */
                word if_patternlen;     /* Repeat length of pattern     */
                word if_pixwidth;       /* Width of pixel in µm         */
                word if_pixheight;      /* Height of pixel in µm        */
                word if_linewidth;      /* Width of line in pixels      */
                word if_nlines;         /* Number of lines in image     */
                word *if_exthdr;        /* Extended header info or NULL */
                int if_exthdrlen;       /* Size of ext header in words  */
                byte *if_packed;        /* Pointer to packed data block */
                int if_packedlen;       /* Size of packed data block    */
                byte *if_visible;       /* Pointer to unpacked image    */
                int if_visiblelen;      /* Size of unpacked data block  */
                word if_packflag;       /* Set to 1 if file compressed  */
                int if_bytewidth;       /* Width of line in bytes       */
                char if_name[FNSIZE];   /* Filename                     */
                } IMG_FILE;


/*
** Function declarations...
*/

int main(int,char **,char **);

byte *unpack_scanline(IMG_FILE *,byte *,byte *,int);
int detect_IMG_packed(IMG_FILE *);
int display_picture(IMG_FILE *);
int initialise_gem(void);
int load_file(IMG_FILE *);
int make_window(int,char *,short *,short *,short *,short *);
int read_IMG_file(char *,IMG_FILE *);
int unpack_IMG_file(IMG_FILE *);
void clear_IMG_file(IMG_FILE *);
void describe_IMG_file(IMG_FILE *);
void image_error(int);


/*
** Macro functions to convert an AES rectangle
** (x,y,w,h) to a VDI-compatible format
** (coordinate of opposite corners).
*/

#define make_pxy(a,b,c,d,e) {a[0] = b; a[1] = c; a[2] = b+d-1; a[3] = c+e-1;}


/*
** Global variables...
*/

IMG_FILE picture;                       /* Structure containing image   */
short handle;                           /* Program's VDI handle         */
short ap_id;                            /* Program's AES identifier     */
short screen_width, screen_height;      /* Dimensions of screen         */
short char_width, char_height;          /* Dimensions of character cell */
short screen_planes;                    /* Number of screen planes      */


/*
** The program starts here...
*/

int main(int argc, char **argv, char **envp)

{
    short choice;
    int result, loaded;

    if (initialise_gem() == FALSE)
        {
        printf("GEM initialisation failed !\n");
        return(0);
        }
    if (screen_planes == 1)
        {
        while(TRUE)
            {
            loaded = load_file(&picture);
            do
                {
                if (loaded == FALSE)
                    break;
                choice = form_alert(2,"[0][|IMG file loaded correctly. |Now what
?|][Report|View|File]");
                if (choice == 1)
                    describe_IMG_file(&picture);
                if (choice == 2)
                    {
                    graf_mouse(BUSYBEE,NULL);
                    if (picture.if_visible == NULL)
                        if ((result = unpack_IMG_file(&picture)) != 0)
                            image_error(result);
                    graf_mouse(ARROW,NULL);
                    if ((result = display_picture(&picture)) != 0)
                        image_error(result);
                    }
                }
            while (choice != 3);
            choice = form_alert(1,"[0][|Load another file, or |exit the program
?|][Load|Quit]");
            if (choice == 2)
                break;
            clear_IMG_file(&picture);
            }
        }
    else form_alert(1,"[3][|IMG Viewer can only run in|monochrome screen
modes.|][Abort]");
    v_clsvwk(handle);
    appl_exit();
    return(0);
}


/*
** Function to handle the loading dialogue
** part of the user interface.  The argument
** is a pointer to the picture structure to
** write the IMG file details into.  The return
** value is TRUE if a file was loaded, or FALSE
** if not.
**
** Usage:   result = load_file(img);
**
**          int load_file(IMG_FILE *);
*/

int load_file(IMG_FILE *img)

{
    char filename[FNSIZE], path[FMSIZE];
    char *s;
    short choice;
    int result;

    getcd(0,path);
    strcat(path,"\\*.IMG");
    filename[0] = '\0';
    fsel_exinput(path,filename,&choice,"Select .IMG file to view");
    if (choice == TRUE)
```

```
        {
        if ((s = strrchr(path,'\\')) != NULL)
            strcpy(s+1,filename);
        else strcpy(path,filename);
            strcpy(img->if_name,filename);
        if ((result = read_IMG_file(path,img)) != 0)
            image_error(result);
        if ((result = detect_IMG_packed(img)) != 0)
            image_error(result);
        }
    return(choice);
}


/*
** Function to initialise the GEM system,
** setting up some global variables with useful
** information.  There are no arguments.  The
** return value is TRUE if all went well, or
** FALSE, when the program should not make
** any further GEM calls.
**
** Usage:   result = initialise_gem();
**
**          int initialise_gem(void);
*/

int initialise_gem(void)

{
    static short work_in[11] = {1,1,1,1,1,1,1,1,1,1,2};
    short work_out[57];
    short physical_handle, dummy;

    if ((ap_id = appl_init()) == -1)
        return(FALSE);
    physical_handle = graf_handle(&char_width,&char_height,&dummy,&dummy);
    handle = physical_handle;
    v_opnvwk(work_in,&handle,work_out);
    if (handle == 0)
        {
        appl_exit();
        return(FALSE);
        }
    screen_width = work_out[0] + 1;
    screen_height = work_out[1] + 1;
    vq_extnd(handle,1,work_out);
    screen_planes = work_out[4];
    graf_mouse(ARROW,NULL);
    return(TRUE);
}


/*
** Function to handle any errors that may
** arise during IMG file handling.  The
** argument is an integer which specifies
** the error.  The function displays an
** appropriate error alert and terminates
** the program.
**
** Usage:   image_error(code);
**
**          void image_error(int);
*/

void image_error(int err)

{
    char buffer[256];
    static char *msgs[] =   {
        "Unexpected error message code !",
        "Error while opening|IMG file for input",
        "Error while reading|IMG header block",
        "Could not get memory|for extended header block",
        "Error while reading|extended header block",
        "Could not get memory|for packed data block",
        "Error while reading|packed data block",
        "NULL pointer passed|to function",
        "Not enough memory to|unpack file",
        "This version cannot|unpack colour .IMG files",
        "Stepped outside block|boundary while unpacking",
        "Error in compressed file|format",
        "Error in GEM window code"
                            };

    if (err < 0 || err >= (sizeof(msgs)/sizeof(char *)))
        err = 0;
    sprintf(buffer,"[1][|%s.||][Cancel]",msgs[err]);
    form_alert(1,buffer);
    v_clsvwk(handle);
    appl_exit();
    exit(0);
}


/*
** Function to read an IMG file into memory.  The
** arguments are the pathname of the IMG file
** to be processed, and a pointer to a structure to
** save the file into.  The function returns 0
** if all went well, or a negative error code if
** not.
**
** Usage:   result = read_IMG_file(name,img);
**
**          int read_IMG_file(char *,IMG_FILE *);
*/

int read_IMG_file(char *filename, IMG_FILE *img)

{
    long file_size, wordwidth;
    FILE *fp;

    if (img == NULL)
        return(IMGERR_POINTER);
    img->if_exthdr = NULL;
    img->if_exthdrlen = 0;
    img->if_packed = NULL;
    img->if_packedlen = 0;
    img->if_visible = NULL;
    img->if_visiblelen = 0;

    if ((fp = fopen(filename,"rb")) == NULL)
        return(IMGERR_FILE);
    fseek(fp,0L,SEEK_END);
    file_size = ftell(fp);
    rewind(fp);
    if (fread(&img->if_version,8 * sizeof(word),1,fp) != 1)
        {
        fclose(fp);
        return(IMGERR_HEADER_FILE);
        }
    if (img->if_hdrlen > 8)
        {
        img->if_exthdrlen = img->if_hdrlen - 8;
        img->if_exthdr = (word *)malloc(img->if_exthdrlen * sizeof(word));
        if (img->if_exthdr == NULL)
            {
            fclose(fp);
            return(IMGERR_EXTHEADER_MEM);
            }
        if (fread(img->if_exthdr,img->if_exthdrlen * sizeof(word),1,fp) != 1)
            {
            fclose(fp);
            return(IMGERR_EXTHEADER_FILE);
            }
        }
    img->if_packedlen = file_size - (img->if_hdrlen * sizeof(word));
    if ((img->if_packed = (byte *)malloc(img->if_packedlen)) == NULL)
        {
        fclose(fp);
        return(IMGERR_PACKED_MEM);
        }
    if (fread(img->if_packed,img->if_packedlen,1,fp) != 1)
        {
        fclose(fp);
        return(IMGERR_PACKED_FILE);
        }
    fclose(fp);
    wordwidth = img->if_linewidth / BITS_PER_WORD;
    if (img->if_linewidth % BITS_PER_WORD)
        wordwidth++;
    img->if_bytewidth = wordwidth * sizeof(word);
    return(0);
}


/*
** Function to test whether the IMG file is in
** the compressed format or not.  The argument
** is a pointer to the IMG_FILE structure.  The
** function fills in the 'if_packflag' field in
** the structure.  It returns 0 if all went well,
** or an error code.
**
** Usage:   result = detect_IMG_packed(img);
**
**          int detect_IMG_packed(IMG_FILE *);
*/

int detect_IMG_packed(IMG_FILE *img)

{
    byte *dot;
    int packed;

    if (img == NULL || img->if_packed == NULL)
        return(IMGERR_POINTER);
    packed = FALSE;
    dot = img->if_packed;
    while (dot < img->if_packed + img->if_packedlen)
        {
        if (*dot != 0x80)
            {
            packed = TRUE;
            break;
            }
        dot += *++dot + 1;
        }
    img->if_packflag = packed;
    return(0);
}
```

```
/*
** Function to produce a short printed report on the IMG file that has
** just been read. The argument is a pointer to the IMG file block.
** There are no return values.
**
** Usage:   describe_IMG_file(img);
**
**          void describe_IMG_file(IMG_FILE *);
*/

void describe_IMG_file(IMG_FILE *img)

{
    int resolution, width, height, whandle, line;
    long compression;
    short wx, wy, ww, wh, clip[4], dummy, pipe[8];
    char buffer[256];

    resolution = 254000/img->if_pixwidth;
    resolution = (resolution + 5)/10;
    width = img->if_linewidth * img->if_pixwidth;
    height = img->if_nlines * img->if_pixheight;
    wx = wy = 50;
    ww = 384;
    wh = 192;
    if ((whandle = make_window(NAME|CLOSE," IMG Report ",&wx,&wy,&ww,&wh)) < 0)
        return;
    make_pxy(clip,wx,wy,ww,wh);
    vs_clip(handle,1,clip);
    vst_color(handle,BLACK);
    vst_alignment(handle,0,5,&dummy,&dummy);
    line = wy + 4;
    sprintf(buffer,"Filename: %s",img->if_name);
    v_gtext(handle,wx+4,line,buffer);
    line += char_height;
    sprintf(buffer,"IMG format version: %d",img->if_version);
    v_gtext(handle,wx+4,line,buffer);
    line += char_height;
    if (img->if_nplanes == 1)
        strcpy(buffer,"Monochrome bit image");
    else sprintf(buffer,"Colour IMG file (%d planes)",img->if_nplanes);
    v_gtext(handle,wx+4,line,buffer);
    line += char_height;
    if (img->if_exthdrlen != 0)
        {
        sprintf(buffer,"Extended header data: %d words",img-
>if_exthdrlen/sizeof(word));
        v_gtext(handle,wx+4,line,buffer);
        line += char_height;
        }
    if (img->if_pixwidth != img->if_pixheight)
        strcpy(buffer,"Pixels are not square");
    else sprintf(buffer,"Image resolution = %d dpi",resolution);
    v_gtext(handle,wx+4,line,buffer);
    line += char_height;
    sprintf(buffer,"Image size: %d mm wide x %d mm high",width/1000,height/1000);
    v_gtext(handle,wx+4,line,buffer);
    line += char_height;
    sprintf(buffer,"            %d pixels wide x %d lines high",img-
>if_linewidth,img->if_nlines);
    v_gtext(handle,wx+4,line,buffer);
    line += char_height;
    sprintf(buffer,"File data block: %d bytes",img->if_packedlen);
    v_gtext(handle,wx+4,line,buffer);
    line += char_height;
    if (img->if_packflag == FALSE)
        strcpy(buffer,"Image stored in uncompressed format");
    else
        {
        compression = 100 * img->if_packedlen * 8;
        compression /= (img->if_linewidth * img->if_nlines);
        sprintf(buffer,"Image packed to %ld%% of original size",compression);
        }
    v_gtext(handle,wx+4,line,buffer);
    line += char_height;
    sprintf(buffer,"Memory required for unpacking: %ld bytes",img->if_bytewidth *
img->if_nlines);
    v_gtext(handle,wx+4,line,buffer);
    line += char_height;
    vs_clip(handle,0,NULL);
    do evnt_mesag(pipe);
    while (!(pipe[0] == WM_CLOSED && pipe[3] == whandle));
    wind_close(whandle);
    wind_delete(whandle);
}


/*
** Function to clear an image file structure, ** returning the large
** memory buffers to the heap.  The function argument is a pointer
** to the file descriptor block. There are no returns.
**
** Usage:   clear_IMG_file(img);
**
**          void clear_IMG_file(IMG_FILE *);
*/

void clear_IMG_file(IMG_FILE *img)

{
    img->if_version = img->if_hdrlen = img->if_nplanes = 0;
    img->if_patternlen = img->if_pixwidth = img->if_pixheight = 0;
    img->if_linewidth = img->if_nlines = img->if_exthdrlen = 0;
    img->if_packedlen = img->if_visiblelen = img->if_packflag = 0;
    img->if_bytewidth = 0;
    img->if_name[0] = '\0';
    if (img->if_exthdr != NULL)
        {
        free(img->if_exthdr);
        img->if_exthdr = NULL;
        }
    if (img->if_packed != NULL)
        {
        free(img->if_packed);
        img->if_packed = NULL;
        }
    if (img->if_visible != NULL)
        {
        free(img->if_visible);
        img->if_visible = NULL;
        }
}


/*
** Function to unpack a monochrome IMG file into a format suitable for further
** processing. The argument is a pointer to the file descriptor block.
** The function returns 0 if all went OK, or an error code if not. The function
** cannot unpack colour multiplane) IMG files.
**
** Usage:   result = unpack_IMG_file(img);
**
**          int unpack_IMG_file(IMG_FILE *);
*/

int unpack_IMG_file(IMG_FILE *img)

{
    int lines, rpt;
    byte *in, *inend, *out, *outend, *wks;

    if (img == NULL || img->if_packed == NULL)
        return(IMGERR_POINTER);
    if (img->if_nplanes > 1)
        return(IMGERR_UNPACK_COLOUR);
    img->if_visiblelen = img->if_bytewidth * img->if_nlines;
    if ((img->if_visible = (byte *)calloc(img->if_visiblelen,1)) == NULL)
        return(IMGERR_UNPACK_MEM);
    if ((wks = (byte *)malloc(img->if_bytewidth)) == NULL)
        return(IMGERR_UNPACK_MEM);
    in = img->if_packed;
    inend = img->if_packed + img->if_packedlen;
    out = img->if_visible;
    outend = img->if_visible + img->if_visiblelen;

    lines = 0;
    while (lines<img->if_nlines)
        {
        if (in > inend || out > outend)
            return(IMGERR_UNPACK_BOUNDS);
        if (*in == 0x00 && *(in+1) == 0x00)     /* Replication count    */
            {
            rpt = *(in+3);
            in += 4;
            }
        else rpt = 1;
        if ((in = unpack_scanline(img,wks,in,img->if_bytewidth)) == NULL)
            return(IMGERR_UNPACK_FORMAT);
        while (rpt-- && lines<img->if_nlines)
            {
            memcpy(out,wks,img->if_bytewidth);
            out += img->if_bytewidth;
            lines++;
            }
        }
    if (wks != NULL)
        free(wks);
    return(0);
}


/*
** Function to unpack the data for a single scanline of the
** IMG file into a workspace area.  The arguments are pointers
** to the file descriptor, the input data, a workspace, and the
** width of the workspace in bytes.  The function returns
** an updated input pointer, or NULL if an error occurs.
**
** Usage:   newin = unpack_scanline(img,works,in,wsize);
**
**          byte *unpack_scanline(IMG_FILE *,byte *,byte *,int);
*/

byte *unpack_scanline(IMG_FILE *img, byte *wks, byte *in, int wsize)

{
    register byte *out;
    register int f, g;

    out = wks;
    for (f=0; f<wsize; f++)
        *(out+f) = 0;
    while ((out-wks) * 8 < img->if_linewidth)
        {
        if (*in == 0x00)                /* Pattern run  */
            {
```

```
            f = *++in;
            if (f == 0x00)
                return(NULL);
            in++;
            while (f--)
                for (g=0; g<img->if_patternlen; g++)
                    *out++ = *(in+g);
            in += img->if_patternlen;
            }
        else if (*in == 0x80)           /* Bit stream   */
            {
            f = *++in;
            while (f--)
                *out++ = *++in;
            in++;
            }
        else                            /* Solid run    */
            {
            g = (*in & 0x80) ? 0xFF : 0x00;
            f = *in++ & 0x7F;
            while (f--)
                *out++ = g;
            }
        }
    return(in);
}


/*
** Function to display an unpacked image file within a nice GEM interface.
** The argument is a pointer to a file descriptor containing an
** unpacked file.  The function returns 0 if all went well, or an error code.
**
** Usage:   result = display_picture(img);
**
**          int display_picture(IMG_FILE *);
*/

int display_picture(IMG_FILE *img)

{
    short sx, sy, sw, sh, whandle, pipe[8];
    short wx, wy, ww, wh, kind;
    short pic_x, pic_y, old_x, old_y;
    short hsize, vsize, hpos, vpos;
    short blitpxy[8];
    int temp;
    MFDB memory, window;
    char title[FNSIZE+2];

    sprintf(title," %s ",img->if_name);
    wind_get(DESK,WF_WORKXYWH,&sx,&sy,&sw,&sh);
    kind = NAME|CLOSE;
    wind_calc(WC_BORDER,kind,sx,sy,img->if_linewidth,img-
>if_nlines,&wx,&wy,&ww,&wh);
    if (ww > sw)
        kind |= HORIZBAR;
    else sw = ww;
    if (wh > sh)
        kind |= VERTBAR;
    else sh = wh;
    wind_calc(WC_WORK,kind,sx,sy,sw,sh,&wx,&wy,&ww,&wh);
    if ((whandle = wind_create(kind,sx,sy,sw,sh)) < 0)
        return(INGERR_WINDOW);
    wind_set(whandle,WF_NAME,ADDR(title));
    wind_set(whandle,WF_CURRXYWH,sx,sy,sw,sh);
    wind_get(whandle,WF_WORKXYWH,&wx,&wy,&ww,&wh);
    wind_open(whandle,sx,sy,sw,sh);
    pic_x = pic_y = 0;
    old_x = old_y = -1;
    if (kind & HORIZBAR)
        {
        hsize = (short)((999 * (int)ww) / img->if_linewidth) + 1;
        wind_set(whandle,WF_HSLSIZE,hsize);
        }
    if (kind & VERTBAR)
        {
        vsize = (short)((999 * (int)wh) / img->if_nlines) + 1;
        wind_set(whandle,WF_VSLSIZE,vsize);
        }
    window.fd_addr = NULL;
    memory.fd_addr = img->if_visible;
    memory.fd_w = img->if_linewidth;
    memory.fd_h = img->if_nlines;
    memory.fd_wdwidth = img->if_bytewidth / sizeof(word);
    memory.fd_stand = 0;
    memory.fd_nplanes = img->if_nplanes;
    memory.fd_r1 = memory.fd_r2 = memory.fd_r3 = 0;
    make_pxy((&blitpxy[4]),wx,wy,ww,wh);

    while(TRUE)
        {
        if (old_x != pic_x)
            {
            temp = (pic_x * 999) / (img->if_linewidth-ww);
            hpos = (short)temp + 1;
            if (kind & HORIZBAR)
                wind_set(whandle,WF_HSLIDE,hpos);
            }
        if (old_y != pic_y)
            {
            temp = (999 * pic_y) / (img->if_nlines-wh);
            vpos = (short)temp + 1;
            if (kind & VERTBAR)
                wind_set(whandle,WF_VSLIDE,vpos);
            }
        if (old_x != pic_x || old_y != pic_y)
            {
            make_pxy(blitpxy,pic_x,pic_y,ww,wh);
            graf_mouse(M_OFF,NULL);
            vro_cpyfm(handle,S_ONLY,blitpxy,&memory,&window);
            graf_mouse(M_ON,NULL);
            }
        old_x = pic_x;
        old_y = pic_y;
        do evnt_mesag(pipe);
        while (pipe[3] != whandle);
        if (pipe[0] == WM_CLOSED)
            break;
        else if (pipe[0] == WM_ARROWED)
            switch (pipe[4])
                {
                case WA_UPPAGE: pic_y = (pic_y > PAGE_INCR) ? pic_y-PAGE_INCR : 0;
                                break;
                case WA_DNPAGE: if (pic_y+wh > img->if_nlines-PAGE_INCR)
                                    pic_y = img->if_nlines - wh;
                                else pic_y += PAGE_INCR;
                                break;
                case WA_UPLINE: pic_y = (pic_y > LINE_INCR) ? pic_y-LINE_INCR : 0;
                                break;
                case WA_DNLINE: if (pic_y+wh > img->if_nlines-LINE_INCR)
                                    pic_y = img->if_nlines - wh;
                                else pic_y += LINE_INCR;
                                break;
                case WA_LFPAGE: pic_x = (pic_x > PAGE_INCR) ? pic_x-PAGE_INCR : 0;
                                break;
                case WA_RTPAGE: if (pic_x+ww > img->if_linewidth-PAGE_INCR)
                                    pic_x = img->if_linewidth - ww;
                                else pic_x += PAGE_INCR;
                                break;
                case WA_LFLINE: pic_x = (pic_x > LINE_INCR) ? pic_x-LINE_INCR : 0;
                                break;
                case WA_RTLINE: if (pic_x+ww > img->if_linewidth-LINE_INCR)
                                    pic_x = img->if_linewidth - ww;
                                else pic_x += LINE_INCR;
                                break;
                }
        else if (pipe[0] == WM_HSLID)
            {
            hpos = pipe[4];
            temp = ((hpos - 1) * (img->if_linewidth - ww)) / 999;
            pic_x = (short)temp;
            }
        else if (pipe[0] == WM_VSLID)
            {
            vpos = pipe[4];
            temp = ((vpos - 1) * (img->if_nlines - wh)) / 999;
            pic_y = (short)temp;
            }
        }

    wind_close(whandle);
    wind_delete(whandle);
    return(0);
}


/*
** Function to open up a GEM window for writing into.  The window is displayed
** and cleared to white ready for use. The arguments are the window gadget list
** a pointer to the window title string and four pointers to variables which
** specify the position and size of the window.  When the function returns,
** these variables will be updated to reflect the working area of the window.
** The return value is the window handle, or a negative error code.
**
** Usage:   whand = make_window(kind,title,wx,wy,ww,wh);
**
**          int make_window(int,char *,short *,short *,short *,short *);
*/

int make_window(int kind, char *title, short *wx, short *wy, short *ww, short *wh)

{
    short sx, sy, sw, sh;
    short buffer[8];
    short rect[4];
    int whandle;

    wind_get(DESK,WF_WORKXYWH,&sx,&sy,&sw,&sh);
    if ((whandle = wind_create(kind,sx,sy,sw,sh)) < 0)
        return(whandle);
    wind_set(whandle,WF_NAME,ADDR(title));
    wind_open(whandle,*wx,*wy,*ww,*wh);
    do evnt_mesag(buffer);
    while (!(buffer[0] == WM_REDRAW && buffer[3] == whandle));
    wind_get(whandle,WF_WORKXYWH,wx,wy,ww,wh);
    make_pxy(rect,*wx,*wy,*ww,*wh);
    vs_clip(handle,1,rect);
    vsf_color(handle,WHITE);
    vsf_interior(handle,FIS_SOLID);
    graf_mouse(M_OFF,NULL);
    v_bar(handle,rect);
    graf_mouse(M_ON,NULL);
    vs_clip(handle,0,rect);
    return(whandle);
}
```

CAD Column

This month Joe Connor takes a look at Kandinsky which offers certain advantages over EasyDraw, especially if you missed the recent giveaway of EasyDraw on Cover Disk.

News

Ditek have at long last found a new UK distributor for DynaCADD. Tekware, based in the West Midlands, are primarily interested in marketing the forthcoming Windows version of DynaCADD but it is likely Ditek will ask them to offer support for versions of DynaCADD on all platforms.
Tel: Bob Snowball on 0562 882125; Fax: 0562 885855

MiniDraft continues to develop with the latest version 1.23 featuring another raft of new features: Auto scroll when edge of screen is hit (similar to tbxCAD), Welding symbol library added, Units now represented as pixels or millimetres, full implementation of drawing levels and optional keyboard/mouse location entry.

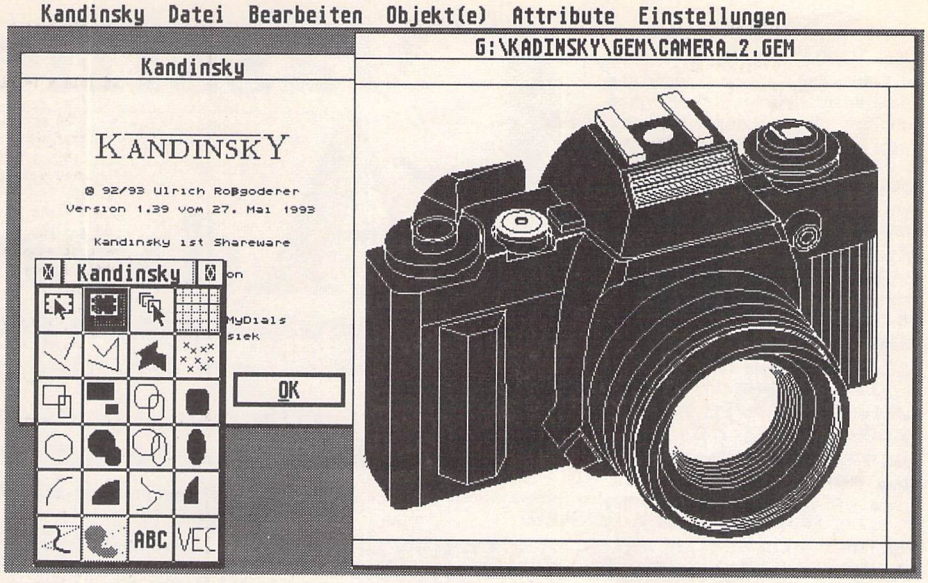
BlowUP030 is very good news for Falcon owners. three students at Munich University have discovered that the resolution of the Falcon can be tinkered with and have written some software which provides these extra resolutions. Not content with this, they started adding some hardware and eventually came up with three different options:

BlowUP030 Software only (29DM, £12)
From within the Software the desired extended resolution can be selected from a pre-defined list, or configured manually. An accessory is provided to switch between the default resolution and the configured extended resolution modes. All resolutions can be selected with rebooting your system. This software-only version works in a similar way to the Super78 utility. Neither results in very high refresh rates which is where the hardware versions come in.

BlowUP030 Hardware Option 1 (99DM, £41)
This version adds an interface box between the Falcon and the VGA adaptor. The box is powered from the joystick Port 2. This should enable most VGA/SVGA monitors to reach the maximum resolutions in up to 16 colours.

BlowUP030 Hardware Option 2 (129DM, £54)
This version includes all of the resolutions provided in the first hardware option but adds improved 256 colour resolutions.

A Demo version is also available (10DM, £4) which includes the software along with one resolution suitable for all VGA monitors. Also included is their DSP Fractal and PD SUPER78 (SVGA/MultiScan only) software. The list of possible resolutions tops out at around 880x608 non-interlaced and 1280x960 interlaced but using a 14" SVGA monitor beyond 800x600 is going to damage your health!
Contact: Ewald Seibert, Eslarnerstraße 34, 8000 München 90, Germany. Email: seibert@informatik.tu-muenchen.de



Kandinsky improves on Easy Draw?

Kandinsky takes over where EasyDraw leaves off. Kandinsky is a commercial quality Shareware vector graphics application ideal for working with colour and monochrome GEM Metafiles. Comprehensive support for all the latest Atari standards, MultiTOS, SpeedoGDOS and the Atari Clipboard is built in. Kandinsky is the first program I've found which uses the .CSV clipboard format for vector graphics. GEM Metafiles from V1.0 to the latest V4.0 can be loaded.

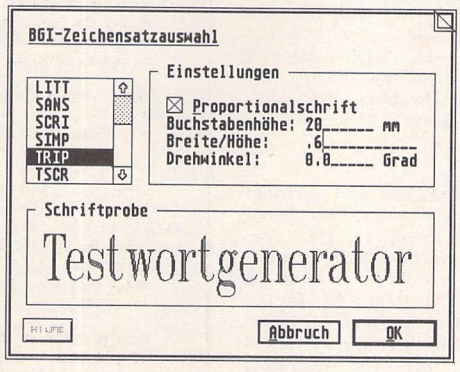
I tried loading some of the Kandinsky sample files into Corel Draw on the PC and am pleased to report they loaded OK. The Gemini desktop VA protocols, AMCGDOS and NVDI are also supported and recommended. Font handling and manipulation is excellent, all GDOS fonts and styles can be utilised but best of all Vector fonts in Borland .BGI format can be used - 10 are included.

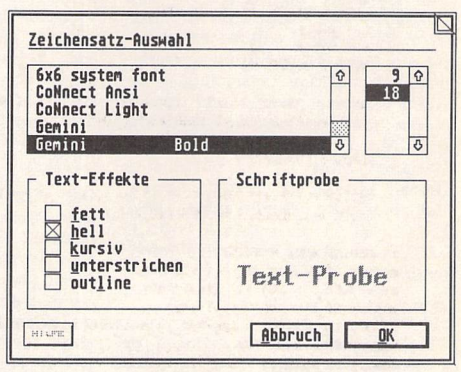
Kandinsky departs from the traditional click, hold down and drag method of drawing elements but for a good reason. To draw an element, click once and release to set the start point, then again and release to set the end point. Between mouse clicks the location functions and scroll bars can be used to move around the drawing, a very powerful option.

All the usual drawing functions are provided including a very nice Bézier drawing tool. Elements can be grouped, ungrouped, moved to the background or foreground, made transparent, solid etc. Comprehensive control over line attributes, fill style/pattern and others are provided from some very slick Dialog panels.

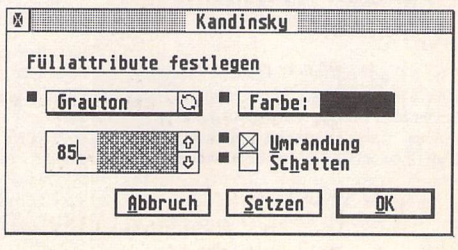
It is well worth registering Kandinsky. The Shareware registration fee of 30DM (around £12) gets you a printed manual along with the latest registered version which includes a working Postscript export and full Zoom function disabled in the Shareware version. There is an English version which I didn't get hold of in time for the column - sorry!

A custom 300x300 dpi GDOS driver is provided which enables GDOS output to be converted to a bitmap and directed to either a printer or IMG file. The driver may be distributed separately and a contribution to Greenpeace is suggested as the Shareware fee.





The Kandinsky interface makes excellent use of the latest Resource tools. Dialog panels with title bars can be left open under multiTOS (example right) and both panel styles can be re-positioned to view the underlying picture. The cyclic icon (shown to right of Grauton) cycles through the options or by clicking on Grauton a pop-up menu appears. The text options are unsurpassed. All the .FNT format GDOS fonts defined in ASSIGN.SYS are auto loaded together with the Vector fonts provided.



Classified Adverts

Classified adverts are free to subscribers.

Please use the form on page 58.

For Sale

Citizen 120D+ 'Lookalike' 9-Pin Printer, Cables and Manuals included and some spare ribbons. In very good condition. Also included is a Single-Sheet Feeder attachment (usually sold as a £50 extra). The lot for £50, buyer collects (South Manchester) or + £10 if sent by post. Phone Bill on 061-962-6866. (33)

65 Meg Hard Drive. ICD Utilities V6.05 - £265. Cleanup ST - £15. 40 Meg Power Slimline Hard Drive with ICD V6.05 - £175. Tel Derby (0332) 832829. (33)

KSpread 4 £20, Master Cad £15, Touch Up V1.6 £30, Headline with many fonts £25, Font 2 Font Editor £12. Telephone 0923 266636 Evenings. (34)

Atari STFM 2.5Mb Ram, 20Mb Powerdrive, Mono Monitor, Neodesk £300. That's Write V1.51 £25, First Word Plus V3.14 £15, High Speed Pascal V1.15 £20, Tempus 2 £10, Wercs £10, Mortimer Plus V2.11 £15, Hyperdraw & G+Plus £15, Degas Elite £10, GFA Basic Compiler V3.5 £15, ST Applications 2-26 plus disk mags 22-33 £20. Bedford (0234) 853637. (32)

Rygar for Lynx: Sell for £16 inc P & P or Swap for another Lynx Game. Write to: Pedro Gago, Rua Da Escola, Bidoeira De Cima, 2400 Leiria, Portugal. (34)

Megapaint Pro V.4 (latest) £64; Hyperchart £38; That's Write 2 plus DJ internal fonts £65; Diamond Edge £15; Diamond Back £15; X Boot 3 £15; Harlekin 2 £15; Golden Image Scanner plus software £64; Games at £5 (eg. Knightmare, Wonderland, etc) and many other bargains. All original & boxed. Phone Gavin on 0602 817198. (32)

ST Applications Nos 1-31 plus the last 4 Newsletters plus Disk Mags 20-33. Offers ring 0594 - 844597. (33)

STFM 2.5 MB Plus Atari Mono Monitor SM 144, and Star LC10 Printer £225; Yamaha PSS 480 Keyboard ideal for Midi £70. Carriage extra. J.R. Middleton, 10 Rosewood Crescent, Clyst St Mary, Exeter, Devon. EX5 1QW. (33)

Sensible Soccer £6; Saragon Chess £4; Italy 1990 £4; Falcon (STFM) £5; TV Sports Football £5; Scrabble £4; GFA US Football £4; RPI Baseball £5; Player Manager £5; Kick Off 2 £5; Flair Paint £10; Fleet St 3 £30; ST Basic £5; Autoroute 1.5 £15; Prodata £20; Protext 4 £40. All includes p+p. PageStream 2.1 £75; 10 Font Disks £20. Call Jane (0730-261818 after 8.00 pm). (32)

4MB STE, 2nd Drive, Third Coast 65MB Hard Drive, Philips Colour Monitor, SM125 Mono Monitor, Atari SLM804 Laser Printer (new drum & toner), Datascan Professional Hand Scanner, WS4000 Modem, Fleet Street Publisher V3, Write On plus other serious leisure and PD software and loads of magazines. Ideal Business/DTP Setup. Ready to run. After sales installation help available if required. All boxed as new £1,500 the lot, may split. Tel: (0273) 881349 after 6pm. Ask for Andrew. (33)

Flexidump Plus £18; Answer Back Jnr Quiz with Factfile 500 Spelling £10; Blitz Turbo £10; Deluxe Paint £15; Fun School 3 (under 5's) £8; Home Accounts £12; Imprint V.122C £8. (Prices incl. Postage) Tel (0524 381581. (Lancaster). (32)

Mega Ste. 4 Meg Ram. 52MB Quantum Hard Disc Tos 2.06. 8 months old, boxed, immaculate. £600. Tel 0428 658173. (33)

ST Games for Sales: 9 Top Quality original games including Lotus Esprit Turbo Challenge, Awesome and James Pond. All 9 for £29.00 (may split). Write (enclosing a SAE) to: Andrew Mellor, 54 Field Road, Ramsey, Huntingdon, Cambs. PE17 1JP. NOW!!! (Also some serious software, full details in reply.) (34)

Signum 2, Protext 5.0, That's Write, all originals, boxed with manuals £25.00 each - Phone Tony on (0532) 531960 6-9 pm or weekends. (33)

Atari PTC1426 Colour Monitor - all ST resolutions, including STE high resolution colour, and TT low and medium resolutions. 13" diagonal screen. £140. ono. John Bowsher 0304 369405. (33)

Printer Switch Box and 2 Cables - Connect 1 Computer to 2 Printers or 2 Computers to 1 Printer (Paralell Interface). Would cost over £30 new, only £20 inc p + p. Phone Simon (0327) 843249. (33)

Suprpa 2400 Plus Modem, VGC £70; Tank Platoon £10; Grand Prix £10; Epic £10; Robocop 3 £10; 3D Construction Kit 2.0 £10. Tel Andrew 0594 563666. (32)

1040 STF, Mouse, PD Disks, Magazines, £110 ono. Yamaha PSS790 Keyboard, Multitimbral, Midi 8 Track Sequencer, Percussion Pads, Stand, boxed as new £100. Prestel Modem with Rubyview Viewdata software for ST. £15; Games:- Nightbreed, Time Machine, £3.50 each. Imprint (24-Pin Mono) £5, Fontpac Plus Gem Sets, Castleton for 24-Pin 180 DPI and 360 DPI. £3 each. Tel - Jon, Eastbourne

Authorware

If you would like to see your software featured in the ST Applications Authorware column please send us a review copy of the software and a rough outline of the advertising copy you would like to be printed.

Morse Master

The complete morse trainer and simulator, with realistic 'on-air' emulator and integral editor, with complete control of your listening equipment. In addition to sending, your Atari can also receive and decode morse from your own key using the supplied interface cable. Send Cheque/PO for £29.99 payable to Boscad Ltd at: 16 Aytoun Grove, Balbridgeburn, Dunfermline, Fife, KY12 9TA. Telephone (0383) 729584 evenings for technical information.

STEN

ST ENthusiasts disk magazine - for your copy send a disk + SAE to: Dave Mooney, 14 School Road, Morningside, Newmains, Lanarkshire.

SynTax

The ST adventure magazine on disk! Reviews, solutions, hints, special features and much, much more. Runs in colour only. Produced bi-monthly. SynTax costs £3.50 an issue, £20 for a year's subscription. Cheques made payable to S. Medley should be sent to: 9 Warwick Road, Sidcup, DA14 6LJ.

Kitchen Design Program

Create kitchen plans, and elevation views to scale from a wide selection of units and appliances with worktops, pelmets, etc. High resolution mono only. Lawrence Elliott, 42 Gwaun Coed, Brackla, Bridgend, Mid Glamorgan CF31 2HS.

Clip Art

Clip Art specifically for Christian and Community Magazines. Seven disks of IMG images for DTP programs supplied with a printed picture catalogue of every image. Cost: £3 per disk plus P&P: total of £23 for the set. Cheques payable to: Peter Kempley, KemCom Designs, 21 Chart House Road, Ash Vale, Aldershot, GU12 5LS.

Calamus Manual

This self-tutorial guide incorporating sections on frame drawing, entering text, changing fonts and styles, importing text and images, drawing boxes and lines, loading, saving, printing, text rulers, headers and footers and page numbers. Available at £5 (including postage) from: David Waller, The Sandon School, Molram's lane, Great Baddow, Chelmsford, Essex, CM2 7AQ. Cheques should be made out to 'Sandon School'.

Genealogy

Newgen, my genealogy program, runs on any ST(E) or TT and is easy to use; it will print family trees, etc. Send large SAE for details or £17 for program. E G Richards, 2 Peckarmans Wood, London SE26 6RX.

Educational Adventures

For ages 5-13. 88% in ST Format. £12 each. 50p per disk for demo's. CVS, 18 Nelson Close, Teignmouth, TQ13 9NH. Tel: (0626) 779695.

RAE Morse Test

Selectable letter/number groups, thinking time, note pitch, morse generation from keyboardfor CQ; plus save to disk, etc. Instruction manual and disk and SAE for more details. R. L. Tuft, 62 Admirals Court, Thirsk, North Yorks, YO7 1RR. Telephone: 0845-525082.

Sonix Sound Sampling

We will sample your sounds from tape to disk. Ideal for demos, games and your own programs. 3-day turnaround guaranteed. Write for free details to: The Lodge, Delly End, Hailey, Witney, Oxon, OX8 5XD.

Learning a Language?

ACADEMIC SOFTWARE supply several budget foreign language disks to help you in your studies. Call 0296 82524 any time (stating your address) for a free brochure sent same day.

Or write to 128 Ingram Ave, Aylesbury, Bucks, HP21 9DJ.

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Circuit Designer

Create good quality circuit diagrams quickly and easily. Comes with laser printed manual. Works with any ST or STe computer with monochrome monitors. Costs only £7.00: Send Orders to:

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STTrack

Use up to four light beams with your ST. Measure speed and acceleration. Write data to disk for spreadsheet. Invaluable for science National Curriculum AT4. High resolution only. Software and manual with full details £20. Cheques payable to:

F.J. Wallace, 9 High Elms Road, Hullbridge, Essex SS5 6HB.

Scanner Manager

A specialised database system for all scanner owners, this software has been designed to be very easy and quick to use.

For further details contact: Stuart Coates. 9 Links Road, Kibworth Beauchamp, Leicester LE8 0LD.

(0323) 500910. (33)

Roland D110 Library Disk, instand access to over 2,600 of the very best sounds, in a program which runs with your favourite Atari Sequencer. £27.00 including manual sheet. Cheque or Postal Order payable to "B. Tunnard", Address:– "Kave Studios", 45 Carnoustie, Worksop, Notts. S81 0DB. Tel 0909 486971. (36)

Casio FZ1 & Ensoniq EPS Shareware Sounds: Fabulous Sounds from the UK, USA & Sweden. £3.00 / Disk (DD) Including Postage UK. Send Stamped Self Addressed Envelope for free printed list to:– "Kave Studios", 45 Carnoustie, Worksop, Notts. S81 ODB. Tel 0909 486971. (36)

Canon – BubbleJet Ink Refill Service using highest quality permanent Black Ink. Cartridge inspection & test printout included. Send Cheque or Postal Order payable to:– B. Tunnard. Address:– "Kave Studios" 45 Carnoustie, Worksop, Notts. S81 0DB. (Please package securely as this will be re–used for the return.) Tel. 0909 486971. (36)

GFA Basic V3.5 (Interpreter) – £15; STOS (Interpreter + Compiler) – £15; Solderless STE TOS–Switcher – £15; TOS 1.62 Roms – £15; Devpac 2 (Manual only) – £15: Postage extra. Phone Russell 0277 373823. (33)

Protar 80 Mb Hard Drive, Neodesk 3 and Lotus 3 – £350 ono. Phone Kevin on Portsmouth 0705 267929 after 5pm. (32)

Atari STE with 4Meg Ram and C16 '286 Module – £300, Hand Scanner and S/W – £50, Power Drive 900e (40mb) – £100, Hisoft Basic 2 – £35, Replay professional – £35, Fast Basic cartridge – £20, Lattice C – £50, Roland D110 Midi Module – £200. Selling because of change of machine. Phone Tim 081–464–2850 (answerphone). (32)

GFA Basic (Interpreter, compiler and shell) £25, Hisoft PTL Modula 2 – £20, Hisoft Basic 1 –£20, Hisoft Wercs – £10, Hisoft C (Interpretor) – £20, MPE Forth – £10, Hisoft Forth – £10, Hisoft Lattice C V5.5 – £60. Address:– 68 Osprey Road, Biggleswade. Beds, SG18 8HE. Contact: Neil Bingham 0767–316879. (32)

Atari 520 STFM, Upgraded to 1 Meg RAM & 1 Meg Internal Floppy E100 including some Commercial Software (NeoDesk, Timeworks DTP & others) & some PD Software; Atari SM125 Mono Monitor with tilt & swivel base £75; Panasonic KXP1124, excellent 24–pin printer £100. Will sell separately or £250 the lot! All items in full working order. Contact Jon or Helen (0728) 688909. (32)

Must clear my shelves! Hyperpaint 2 – £8.00; Borodino – £4.00; STOS V2.5 – new copy – £6.00; 0.5 Meg Simm for 0.5 –> 1 Meg STE Upgrade – £6.00; 2,000 sheets of 80 GSM continuous A4 paper – £12.00; Centronics Printer Cable (new & still sealed in bag) – £4.00. Contact John Weller, 49 Haylett Gardens, Surbiton Crescent, Kingston, Surrey KT1 2ER. Phone: (081) 5460993. (32)

Infocom games at £8 each including Bureaucracy, Zork I, and II, Stationfall, etc. Also many RPG/Adventures from £5. Cameron Handy Scanner £40. Ring (081) 395 4853 between 6–10pm for details or send a SAE to Ian Taylor, 43 Onslow Gardens, Wallington, Surrey SM6 9QH. (33)

Atari 1040 STE + 4Mb Upgrade, PageStream 1 + 2, Timeworks, 1st Word Plus, STOS, 20 games, 2 Joy Sticks, all boxed as new with manuals £275 ono. Philips CM8832 Colour Monitor boxed £120, 20Mb Hard Disc boxed £80, Blitz Turbo External Drive boxed £50, Tel Barnsley (0226) 716073 anytime. (33)

MCC Pascal £25, Scrabble De Luxe £12. Both original with box/manuals. 0332 832829. (32)

Philips 8833 Colour Monitor – Less than 20 hours' use, boxed, buyer collects £120; Protext 5.02 £40; K Spread 4.15 £40; Timeworks 1.12 £20; Fontkit Plus 3.4 £8; Quick ST 3.03 £8; Easy–Text Plus 1.3 (9 Pin) £5; GFA Basic 2 + Vector £5. All original discs used once only. All manuals as new or excellent condition. – 0234 740679 (Bedford). (32)

Disc Drive 5.25" half height, cased inc power supply, 40–80 tracks. Some discs as new – offers or exchange small Midi Instrament. 0656 860114–Jeff, 32 Glan–y–nant, Pencoed, Mid Glam. (32)

Atari 520 STFM, loads of disks, Atari magazines, ST Formats, ST Worlds. Complete with joystick (zip–stick), mouse and all leads. Selling to upgrade. Quick sale at £150. Phone James (0772) 718730. (33)

HP Deskjet 500 Epson FX–80 Printer Emulation Cartridge £35 inc. p&P. 081–851 5942 after 7pm. (32)

Vidi ST Video Digitiser with Software and Cables. £50.00 ono. High Speed Pascal 1.5 £30 ono. Phone Tim 0322–275755. (Dartford). (33)

C–Lab Notator/Creator Midi Program V3.0 with option for latest upgrade – prestine condition £275 ono. Eddie Prentice (0289) 303238. (32)

Timeworks Publisher 2 as new complete £60.00. Eddie Prentice (0289) 303238. (32)

3D Construction Kit II with Video (In German!) new, unregistered – £25.00 or swap Knights of the Skies. – Fool's Errand, Gravity, Mystical – £5.00 or swap W.H.Y. – Tel 0709 372970 (Rotherham). (32)

Hard Disc, Gasteiner 105 Mbyte (Quantum 11ms) lightly used, one year old – £300, External 5.25 inch Disc Drive inc. PSU £50.00, Spectre GCR incl ROMs – only £200, Supercharger External IBM Emulator plugs into DMA Port – £80. Phone Andrew 031 556 4913 (Edinburgh). (33)

Master Sound 2 £10, Playback Cartridge £10 or both for £18.00. Easytext Professional DTP with extra Fonts £30, Digita Home Accounts (Original version) £5. All come with manuals & cartridges (If applicable). Help with installation/use freely given. Tel Mike on 0742 618940 anytime. (33)

1040 STE with 4 Meg Ram £250, SM124 £50, SC1224 £50, Lots of software + manuals (1st Word Plus, K Spread 3, Superbase Personal, Wordup, Quick ST 3.0), PD Discs £150. The lot for £450. Phone Robin (0602) 507999 – Evenings. (32)

Steve Davis Snooker, Hyperpaint 2, Virus Killer, 3D Construction Kit (New), Police Quest I, £15 the lot. Phone 071–485 3733 ask for Christine, office hours only. (32)

Hawk Colibri Hand Scanner, 100 dpi to 400 dpi; 32, 16 and 8 grey levels plus Monochrome for Line Art. Complete with interface for cartridge port, power supply, software and manual. Kit includes power image handling and art programmes Scansoft and HJBPaint. ST high resolution only £80. ono. – John Bowsher 0304–369405. (32)

Lattice C V5.06 Compiler – £65, Devpac V2.21 – £25, Wercs – £9, HiSoft C Interpreter V2 – £20, K–Spread 4 – £65, Frontier Clock Card – £9, MasterSound 2 sampler – £10, Games: Sensible Soccer – £9, F19 Stealth – £9, Silent Service 2 – £9, Turrican, Kick Off 2, Speedball 2 – £5 each. Everything in mint condition. Tel Michael (091) 584 6284 after 6pm. (32)

Hard Drive 65 Mb £230, External Drive with Track Indicator £50, HiSoft Basic 2, Timeworks Publisher 2, Thats Write 2 £50 each – All Upgradeable. Other items also available. Phone for details or list – any offers considered. Call Aylesbury (0296) 81218. (32)

All original software. Fontkit Plus 3.4 £10, Kid Gloves, Bombuzal, Macadam Bumper, G–Nius, Mike Read's Pop

Quiz, Mini Gold £3 each. Flipside (Othello), Space Station, Mouse Trap, Prince, Pro-Powerboat Simulator £2 each. Also new members required for South Devon User Group, Keith Harris, 0626-62271. (32)

Feeling Partner Auto/Accompaniment/Sequencing Software, Unused, Boxed with Manual, Blank Registration Card Etc, latest version. £100 ono. Cash Only. 071-488-6935 day. (32)

Vidi-ST Mono Video Digitiser. Good Condition with lead and manual - £55. Tel Roth (0709) 895707. (32)

Moneymarket - £12.50, MT2 - £5.50, Personal Finance Manager - £12.50, Games for sale or exchange:- Lemmings, Populous, Elite, Red Storm, Rising, Orbiter, Lslarry 111, Midwinter, Powermonger, Jet, Stunt Car, Starglider (1&2), Millennium 2.2, Kennedy Approach, Airball, Sentinel, RT Genesis, HF Red October, Bal. of Power 1990, F-15, Tank Attack, etc. Want F19, Civilisation etc. phone Paul on 0268-774089 after 2pm please. (32)

Wanted

SM124 mono monitor, must be in good condition. Tel: 0209 711300. (32)

Konica extended high density 5.25" floppy disks ref. MD/10SU or equivalent, 10MB floppy disks as used in the Supra FD-10 floppy disk drive. Alan Price, 051 724 1232 (Liverpool). (33)

Two tenners offered for full FWP printer driver for DJ510 - fax 0223 812781 or 62 Station Rd, Quy CB5 9AJ. (32)

"Transfile ST CL" and "Psion LZ 64 PC Comms Link" - Phone Eugene, Stevenage, (0438) 728124. (32)

Boxed adverts are available for £3.50 per issue.

Motherboard to work with Yamaha Portasound PSS-51 Synth and Atari 1040 ST-E Micro. Suit Music Student Tel 0745.825 036 anytime. Ask for Paul. (34)

Compute's Tech. Ref Guide Vol 1; V.D.I. Wanted. Write to: Dave Gill, 25 Nunsfield Road, Buxton, Derbyshire, SK17 7BN. (33)

Has anyone got a Modem lying about unwanted? If it is 2400 Baud, V42 bis or faster I'd like to buy it. John (0272) 424748. (32)

Yamaha PSR.400 Keyboard or PSR 500, part exchange with Aria Pro II guitar or cash only. Any other 16 port multitimbar full size cheap keyboard considered. Phone James (0257) 252875. (32)

STE Hard Drive required, Greater than 50 Meg & Cheap. Also wanted:- other STE Peripherals i.e. Hand Scanner. Tel - Brian on 0909 486971 and barter! (32)

Atari SM144 or SM146 Mono Monitor. Phone Russell 0277 373823. (33)

Atari Editor for Ensoniq SQ80 (Similar to ESQl). Phone Bill on 0430 423204. (33)

OCR Software for Atari ST, GFA Basic (Original + Manual) for Atari ST, HiSoft Basic for Atari ST. - A W Woolcock, 30 Roberts Road, Hounsdown, Totton, Southampton. SO4 4EL. (33)

Fleet Street Publisher Printer Driver for Cannon JB10E, to work at 360dpi. I have version 1 of FSP! Phone Tim - 0737 761086 (evenings) (33)

Hard Drive at a reasonable price. Tel Alan on (0284) 700066. (32)

20 or 40 Meg Hard Drive. Must have minimal bad sectors, and include software, leads & manuals. Lowest offers to: 061 344 0684. after 5pm. Ask for Chris. (32)

Is there a free version of an Ensoniq SQ-80 Editor/Voice Librarian? Call Dave:- Tel Newport (0633) 612187. (32)

Hard Drive (Pref 40 Mb or more). Swop for Hameg HM 605, 60 Mhz Oscilloscope. Phone Dave on 081-857-4062 after 7pm. (32)

Your unwanted ST Software, Games, Applications etc. Anything considered at a realistic price. Must be boxed originals with manuals. Send list to Steve Aizlewood, 19 Brushfield Road, Holme Hall, Chesterfield, S40 4XF. (36)

Calamus Fonts & Clip Art: Sale or Swap - anything considered. Ring now: Andy 0532-430177. (34)

1 Mb Simms for STE. Phone Jonathan on 0222 757022 after 4pm. (32)

Software: Funface, Monkey Island, Lure of the Temptress (debugged version), Intro to word processing. Phone Steve on 0246 201263. .(32)

General

Bird Brain BBS 0305 860245 on line Friday, Saturday and Sunday 8pm to 8am . V42615 Dedicated Atari ST only everybody welcome.

The Fractal BBS 0305 266304 on line 9pm to 7am Every night dedicated Atari ST.

The Prodigy's Base BBS 0509 852513 1pm to 11pm every night dedicated Atari ST. (36)

I'll Try That Once! ST Based BBS. Loads of File Area's, 60-70 Message Echo's. 10 Online Games. All speeds V326 V426. Give it a Go! on 0453 765378 8pm to 8am. (40)

Timeworks Files Printed on HP Deskjet 500. Only 27p per page. Minimum order £1.00. Just send Disk and Cheque to: Paul Cooper, 432 Milwards, Harlow, Essex, CM19 4SR. (34)

Membership of the Cheshunt Computer Club is the essential accessory for your Atari. If you live within reach of Herts then give me, Derryck Croker, a ring on 0923 673719 with your name and address and I will send you details. (R)

My Little Phoney BBS (0793) 849044 - all speeds up to V32bis and HST. Specialist Atari ST BBS, carrying all Atari-relatedfidonet and Nest Echoes, and importing international ST file echoes (AFN/ADN). High speed and technically aware callers are especially welcome! (R)

Crystal Tower BBS 01-886-2813 24hrs 300-2400 Baud (Towernet System) Atari ST, PC, Languages, Comms etc + much more. All welcome. (R)

Guide Dogs for the Blind Appeal - Please send used postage stamps to help this worthy cause to: 19 Dunloy Gardens, Newton Abbey, Co. Antrim, BT37 9HZ. (R)

STARGATE BBS: 0476-74616 V21 V22 V22BIS V23 Atari ST section; also PC, Amiga and Comms areas. Comms help and advice for ST and PC via ST Editor. Give it a call and leave a message. If you need comms software get Uniterm from the ST Club. (R)

Professional typeset from 1st Word disks. Over 100 Faces. Output to high quality PMT. Much better than laser. Also cheap printing A5/A4 single colour. Contact: AZTRAL Games, PO Box 8, Lowestoft, Suffolk, NR32 2AS. (R)

The Confederation BBS - Support bbs for all "HITCHHIKER" software releases and GFA programmers. All the latest PD/Shareware from Europe and USA as well as Netmail message areas. On line each evening 10.00pm to 7.00a.m., at all speeds up to 2400. Give us a call today and you will not be disappointed as we are the most friendly BBS in the country - dedicated ST BBS only. 0533 413443.

Help the Hungry in Africa. Please give your support to those facing drought, hunger and ruin. You can help by sending any old coins, stamps or used stamps to - OXFAM TRADING, Stamp & Coin unit, Murdock Road, Bicestor, Oxon, OX6 7RF. (37)

'Alternaties fanzine - Quarterly. £1 per issue. Issue 9 out now (Autumn), Issue 10 out soon. Send £1 (which includes p+p) and address to Alternaties, 39 Balfour Court, Station Road, Harpenden, Herts, AL5 4XT. Writers, visionaries, artists needed. Details to the above address.

Contacts

Didot User Group - any users of Didot or Retouche wishing to join a User Group please write to Peter Restall c/o Swift House, Manor Farm, Upper Stondon, Beds. SG16 6EE. (33)

I'm looking for contacts in England, Germany, France, US and other countries (I read, write and speak very well: English, French and of course Italian) about information on ST/E, TT and Falcon world, please write me (letters on disk are welcomed, Ist Word Plus, Redacteur 3 or ASCII). I'm interested in programming and DTP (mainly) graphic, PD, shareware and news about Atari World, Write to Mario Gardenghi, Via M. D'Azeglio 25, 40026 IMOLA (BO), Italy. (33)

Wanted: ST Contacts, swap PD etc. Write for a list. All letters answered. Dave Moss, 22 Beverley Close, Chessington, Surrey, KT9 2RL. (33)

User Groups

Does anyone know of any Atari User Groups in Manchester or the surrounding area? If so, will someone please write and tell me? D. Haider, 29 Horne Street, Bury, Manchester, BL9 9BW. (33)

Help

I have a Protar 100 DC Series II Hard Drive (System Software 4.1.2) and a 1040 STF. The drive Formats OK, but attempting to copy a large file from floppy to the drive results in 3, 4 or 11 bombs. Turbodos helps - I can copy files of up to around 50K. The conflict must be with TOS 1.2. Can any one help? Protar and Cambridge Business Software don't answer my letters. Contact me on Internet Emeli c/o Panther & Carla Dist.Unige.It, or write to Clyde Meli, 36 Ta'xbiex Terrace, Ta'xbiex, Malta.

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Michael Girling, Camel Quarry House, Wadebridge, Cornwall PL27 7HZ.

DEGASART v2.0

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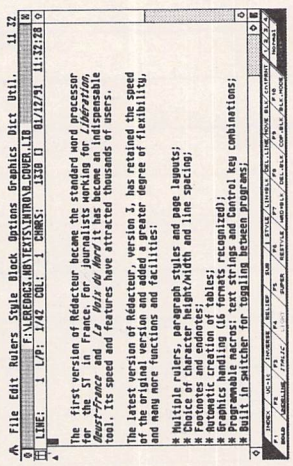

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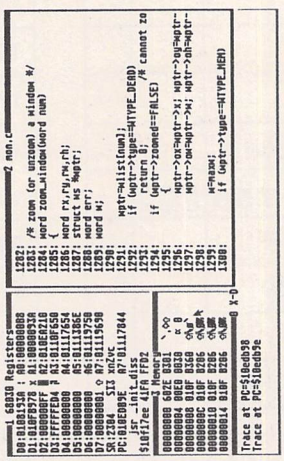

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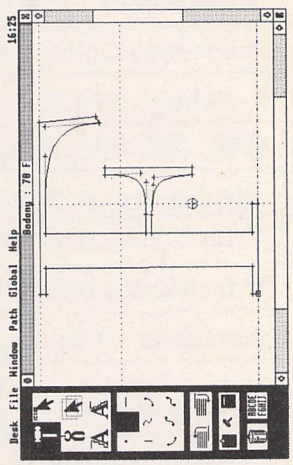

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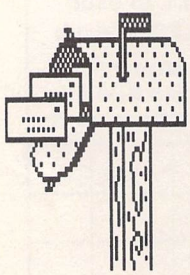

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