

ST APPLICATIONS

Price: £2.50

The Magazine for Users of Atari ST, STE, Falcon and TT Computers

Issue No. 38, February 1994

THIS MONTH

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- * Programmers' Forum
- * Beginners' Forum
- * Going On-Line
- * Forum
- * PD Update
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Textstyle

Peter Crush waxes lyrical and enthusiastic over the latest offering from Jeremy Hughes, a utility that allows you to create large titles and logos in various stylings for use in WP and DTP packages.

Notator SL

The screenshot shows a MIDI sequencer interface for 'Amazing Love'. It features a piano part with treble and bass clefs, a string part with a 'p' dynamic marking, and a bass part. The interface includes a piano roll and a MIDI piano keyboard at the bottom.

STATUS	Pattern: 1	CHANNEL
1	Bass	A 1
2		original A
3	Piano	A 2
4		original A
5	Strings	A 3
6	Top Strn	A 4
7	JazzGuit	A 5
8		original A
9	Snare	A 10
10	Hi Hat	A 10
11	Bass Drm	A 10
12	Rhythm	A 10
13		original A
14		original A
15		original A
16	Tempo	original A

Originally known as Creator VI back in 1986, Notator has moved through its SL incarnation to its latest version, Notator Logic. Tim Finch explains how to get the best out of the now bargain-priced Notator SL v3.

The screenshot shows the 'Realtime MIDI Generator' control panel. It includes a 'STATUS Control' section with 'NUMBER' set to 7 and 'Volume' control. Below is a MIDI piano roll with a grid of notes and a keyboard at the bottom. The interface is titled 'PORT A CHANNELNAME' and includes buttons for 'DELETE HOVERHENTS!' and 'COPY TO ALL!'.

A FALCON APPLICATIONS

- Falcon News
- Falcon Forum

Plus:
'Seeing the Whole Picture'

Jon Ellis presents some square-eyed musings over the new video capabilities of the Falcon.

Outline Art v3

Outline Art has finally come of age. The new version 3 promises an improved interface, 24-bit colour, on-line help and PostScript export - but the upgrade path alone will set you back over £100! Is it worth the extra expense? Niall Grimes gives his views in this issue.

HiSoft HighSpeed Pascal

Pascal enthusiast Graham Curtis reviews HiSoft's new HighSpeed Pascal and is so impressed with it that he says he won't be buying another Pascal compiler for a long, long time...

2000

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Humanist 586 (medium, bold) *Adsans*
Humanist 801 (narrow, narrow italic, narrow bold, narrow bold italic, condensed light, condensed, condensed bold) *Arial*
Humanist 901 (light, light italic, medium, italic, bold, bold italic, black, black italic) *Arial*
Grotesk 102 (medium, italic, bold, bold italic, condensed medium, condensed italic, condensed bold, condensed bold italic) *Helvetica*
Grotesk 125 (medium, italic, bold) *News Gothic*
Grotesk 704 (condensed light, condensed, condensed bold, condensed extra bold) *Abadi*
Geometric 179 (medium, italic, bold, bold italic) *Avant Garde*
Geometric 361 (light, light italic, medium italic) *Metro*
Geometric 431 (medium, black, bold condensed, black condensed) *Neuzeit Grotesque*
Geometric 883 (medium, italic, bold, bold italic) *Century Gothic*

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Brush 200 *Brush Script*
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Brush 403 *Dom Casual*
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Brush 52 *New Berolina*
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Brush 624 *Jefferson*
Brush 677 *Staccato*
Brush 690 *Oz handicraft*
Brush 702 *Mercurius Bold Script*
Brush 822 *Swing Bold*
Brush 850 *Klang*
Brush 864 *Monoline Script*
Brush 92 *Biffo*
Brush 98 *Pepita*
Transitional 117 (book, italic, semi-bold, semi-bold italic, bold, bold italic) *Baskerville*

Set 3

Display 124 *Hobo*
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Display 166 *Broadway*
Display 198 *Dauida Bold*
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Display 479 *Vag Rounded*
Display 522 *Lydian*
Display 534 *Lydian Cursive*
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Display 722 *Albertus*

Display 732 *Clearface Gothic Bold*

Display 743 *Colona*
Display 778 *Davison Americana*
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Display 837 *Old Style Bold Outline*

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Old Style 155 (roman, bold) *Goudy Old*
Old Style 157 (light, light italic, roman, italic, semi-bold, semi-bold italic, bold, bold italic) *Plantin*
Old Style 178 (roman, italic) *Goudy Old Style Catalogue*
Old Style 252 (roman, italic, bold, bold italic, semi-bold, semi-bold italic) *Bembo*
Old Style 277 (roman, italic, bold) *Imperial*
Old Style 635 (roman, italic, bold, bold italic) *Berling*
Old Style 779 (roman, italic, bold, bold italic, extra bold) *Ellington*
Old Style 881 (roman, italic, bold, bold italic) *Book Antiqua*

Set 5

Venetian (book, italic, bold, bold italic) *Centaur*
Clarendon 143 (book, italic, bold, bold italic) *Century Schoolbook*
Clarendon 753 (book, italic, bold, bold italic) *Photina*
Clarendon 784 (book, italic, bold) *Bell*
Modern 752 *Joanna*

Set 6

Blackletter 592 *Fraktur*
Blackletter 207 *Engravers Old English*
Egyptian 344 (light, light italic, medium, italic, bold, bold italic, ultra bold) *Rockwell*
Monopitch 311 (medium, italic, bold) *Courier*
Script 282 *Zapf Chancery*
Script 324 *Corsiva*
Script 395 *Embassy*
Script 521 *Englische Schreibschrift*
Script 591 *Nuptial*

Key: STC font family reference is given first in bold, followed by the weights supplied (in brackets), then the industry standard name for this face.

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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.

New Age Raided

New Age PDL in Essex were raided by the London based Mechanical Copyright Protection Society on 14th December. The raid was carried out in response to a complaint made by a member of the public. New Age were allegedly stocking sampled sound demos and a number of disks were seized by the MCPS, who represent the music industry. Unconfirmed reports suggest that New Age have been given the option of paying royalties on each disk sold or closing down. I was unable to obtain verification on this point as we went to print.

New Age have been the subject of much controversy over the past few months with regard to their blatant disregard for copyright, highlighted by the offer in their catalogue to make up sampled sound demos to order and their advertising of 'erotic' material in advertisements placed in the computer press. The first signs that some-

thing was brewing was when Atari ST User admitted (in a reply to a reader's letter) that New Age had been advertising such material and that it had slipped through the net. Examples of software available in New Age's catalogue include the full transcript to *The Hitchiker's Guide To The Galaxy*, which is described as "probably copyright" and digitised pictures from Madonna's latest book with accompanying text suggesting that you should spend £1.50 on the disk rather than £25 on the book!

I was also reliably informed that New Age are the subject of a police investigation with regard to the 'erotic' material being offered for sale. Once again I was unable to obtain more details since this story came in over the holiday period. I intend to follow up on this piece if and when more information becomes available.

German Software House Closes

Bela Computer GmbH, the company behind NVDI, X-Boot, Mag!x and many others, has closed down. Luckily, their main products have been bought up by other German firms and will continue to be upgraded. The authors of NVDI have taken over the future

development of their product with Maxon taking on X-Boot and Application Systems Heidelberg getting Mag!x. UK distribution remains unaffected at present with HiSoft continuing to handle X-Boot and System Solutions with NVDI and Mag!x.

Did Santa Beat The Jaguar?

Despite assurances that the Jaguar would appear in small numbers before Christmas, many eager would-be purchasers were forced to watch the Queen's Christmas Message instead! As we went to press, there were no reports of Jaguar 'sightings' in the UK. Having said that, communications tend to crumble in the last few days before Christmas so it is conceivable, but highly unlikely, that some did make it into the shops in time.

Despite the obvious disappointment of those who had ordered a Jaguar for Christmas, there was some good news. HMV, Virgin and Thornley Distribution were all claiming that demand was so high that they would sell out as soon as stocks arrived. HMV had already taken enough deposits to sell their entire first consignment without a single unit reaching the shelves! Despite original estimates having been much higher, only 1,000 units were destined to arrive before Christmas, with the lion's share of the European consignment going to France and

Germany. The Jaguar is expected to be available in the UK in decent numbers some time in March.

The latest news on the Jaguar front is that a Virtual Reality headset is under development for release later in the year. This will allow you to play Virtual Reality games from the comfort of your own armchair. However, Atari have expressed a number of concerns about playing such games in a confined space and are said to be looking at a number of prototypes before deciding on a final design which addresses the safety aspect. Another issue which is currently causing concern is the little known side effects of playing Virtual Reality games over long periods of time. Some people have complained about being disoriented or nauseous after prolonged use. (Shouldn't be a problem for anyone brought up on a diet of Neighbours and Home and Away!) No firm release date has been announced for Atari's VR headset.

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 **STA38**, 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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Advertising

There is a limited amount of space for commercial advertising in each issue of *ST Applications*. Contact Nicky Wilson on 0602-455250 for further details and to request a media-pack. Subscribers can place free classified advertisements - see page 57 for details.

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United Kingdom:

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Canadian office: Tel: 519 539 0200; Fax: 519 539 9725.

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.39, will be dispatched a week or so after issue 38 is sent out.

DEXtrous Titan

DEXtrous is a file management system for any Atari. It runs as an accessory and provides all the functions of the standard Desktop plus many more. The program is completely resolution independent and uses a custom designed windowing system for maximum speed and flexibility. The 'Cyberspace Browser' allows you to move into and out of directories, viewing files as you go. The 'Iconic Organiser' lets you organise files into 'logical directories' in a similar manner to the Windows Program Manager for the PC. A novel feature is its

ability to generate 'thumbnails' (icon-sized representations of pictures) from picture files created by any art package. In addition, the DEXtrous file viewer allows graphic files (including GIF, TGA and TIFF) and fonts (GEM and CFN) to be displayed and some music and animation formats to be viewed or played. DEXtrous is another product from the Black Scorpion Software team and will be available in February from Titan Designs Ltd, 6 Witherford Way, Selly Oak, Birmingham B29 4AX; Tel/Fax: 021 414 1630.

Mixed Fortunes For End-Of-Year Shows

The 'Big Three' end-of-year computer shows, namely Live '93 (the UK's first consumer electronics show), The Future Entertainment Show and the Christmas International Computer Show, threw up a few unexpected surprises this time round.

Live '93, organised by News International, was not a computer specific show but covered all aspects of consumer electronics, with an emphasis on computers. This was the first event of its type to be held in the UK. It was based on the highly successful Chicago CES and was expected to draw the crowds. The organisers could hardly complain about the 140,821 who turned up. Live '94 has been moved to Olympia where there is three times as much floor space and will take place between 20th and 25th September.

In stark contrast, neither of the other

two shows had anything to shout about. The Future Entertainment Show attracted 35,828 visitors, a drop of almost 20,000 on the previous year's figures. Although Future Publishing claimed to be happy with the attendance, they have announced a change of venue and more special features for this year's event. The 1994 Future Entertainment Show will run from 26th to 30th October and will be held at Earls Court II.

Despite many successful events in the past, the Christmas International Computer Show at Wembley was an unmitigated disaster. Many exhibitors were very bitter about the low turnout, with some claiming as few as 400 visitors on one of the three days. Official attendance figures have not been released, nor have any details been given as to any future events.

Fast Multi-Tasking On An ST

SMS2 is a new multi-tasking operating system for the ST. It has been in development for around five years and uses up a mere 128k of RAM! The new system was unveiled at the December Atari Shows where it generated a substantial amount of interest. SMS2 is believed to have originated from an academic project and multi-tasks on a standard ST at a very usable speed. It completely replaces GEM and TOS with its own window-based operat-

ing system. The only apparent disadvantage with SMS2 is that its disks are not format compatible with standard ST disks. This makes the porting of data back and forth rather clumsy to say the least. SMS2 comes on a ROM cartridge which plugs directly into the Cartridge port of your ST. I regret that I have no information as to price or availability as we go to press. I expect we will hear more about SMS2 in the coming months.

News In Brief

Microdeal Go Into Liquidation

Microdeal Ltd went into voluntary receivership shortly before Christmas. After surviving more than ten years in the computer software industry, Microdeal surprised everyone by selling the Microdeal name and most of their stock to HiSoft a few months ago. At that time, it was unclear as to what route Managing Director John Symes had taken. It eventually transpired that he was continuing to run the company and had moved on to new projects. Microdeal's remaining stock went under the auctioneer's hammer on 18th December.

Straight Fax Finds A Home

STraight FAX finally has a UK distributor in the form of System Solutions, so users will no longer have to obtain their upgrades through the States. STraight FAX is currently at v2 and is available for £89.95. Users of v1 can upgrade by sending back the complete package along with an upgrade fee of £25. Contact System Solutions, Windsor Business Centre, Vansittart Road, Windsor SL4 1SE; Tel: 0753 832212; Fax: 0753 830344.

Bad Influence News

Yorkshire Television's highly successful 'Bad Influence' is to return for a third series on 8th September. The programme, aimed at teenage computer users, had a following of between 4 and 4.5 million viewers, making it one of the top three children's programmes in the UK. An unconfirmed report suggests that Yorkshire are considering a 'live' Sunday morning show, complete with phone-in competitions, to run alongside the next series.

PrologD+

PrologD+ is a fully-featured, yet efficient, Prolog interpreter for the Atari ST, conforming to the standard 'Edinburgh' syntax of the language. Special features of the implementation include:

- * long integer and double-precision floating point arithmetic
- * access through built-in predicates to a large subset of the ST's GEM and VDI functions
- * advanced control predicates: tagging of calls, examination of ancestor goals, exit/fail/cut to tagged ancestor
- * extensive trace/debugging capabilities
- * comprehensive configuration options for control of memory usage

A second, smaller version of the interpreter is supplied, without the GEM and VDI bindings, for running large non-graphic programs where memory is exceptionally short.

Available as a shareware disk on ST Club disk LAN.153. (Now a Standard range disk at £2.75, £2.00 to subscribers. See catalogue issue 14 for details on our new PD disk prices.)

Ultimate Virus Killer

Written by Richard Karsmakers

THE ULTIMATE VIRUS KILLER
Version 5.56B
Written by Richard Karsmakers

Douglas Communications
P.O. Box 119
Stockport
Cheshire SK2 6HW
England

F1	Search'n'Destroy Viruses
F2	Repair Disks
F3	UVK 5.5 Information
F4	System Status
F5	Quit to Desktop

WED 20.01.1993 20:10:37

This session took 2'51"

Viruses destroyed	:0
Disks/files checked	:0
'Boot Files' written	:0
Immunizations performed	:0
Auto-boots repaired	:0
Unrecognized bootfiles	:0

F1 Oh, well...

WED 20.01.1993 20:13:23

V6 This latest version of UVK has a new easier-to-use user interface, can run as an ACC, and recognises even more viruses and boot-sectors - including the new Bellstein virus.

We always stock the most recent version. For details of upgrades contact: Douglas Communications on 061-456-9587

Features:

- * Recognises all known ST viruses, both bootsector and link viruses, and virtually all software that legitimately uses the disk boot sector.
- * All data on your disks remains 100% intact!
- * Immunizing of disks against all known bootsector viruses.
- * Option to repair damaged or destroyed Bios Parameter Blocks.
- * Option to write Anti-virus.
- * Latest version recognises over 70 viruses and can repair over 710 virus damaged boot-sectors.

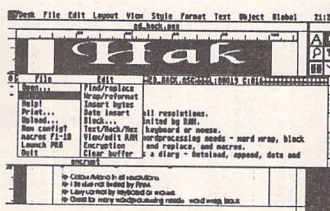
With this handy tool, you need not worry about viruses anymore: You can simply use it to de-infect your disks and programs, destroying the virus and leaving all other information intact.

Price: £12.95

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- ◆ Great for use within other applications.
- ◆ Great for hacking - enter, search and replace all 256 characters in decimal or hexadecimal.

£9.95

includes a 60-page printed manual

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Subscriber Specials

Calamus and Outline Art

Save £££'s

For one month only, we are offering these great deals on the DMC range of publishing tools:

Calamus 1.09N	£ 75.00	(RRP £89)
Calamus S v2	£245.00	(RRP £299)
Calamus SL	£435.00	(RRP £499)
Outline Art v3	£179.00	(RRP £199)

These are all genuine UK versions and prices include both VAT and delivery. Orders must be received by February 28th to qualify for these prices as this offer cannot be repeated.

All these offers must expire on 28th February 1994
Look out for more Subscriber Specials in issue 39

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- ✓ Cannon and Hewlett Packard Compatible.
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- ✓ Syringes may be washed out and re-used with your own inks!
- ✓ Each kit includes two syringes, each holding enough ink for at least two refills.
- ✓ Fullmark are long time suppliers of quality printer consumables.
- ✓ Comprehensive operating instructions supplied.

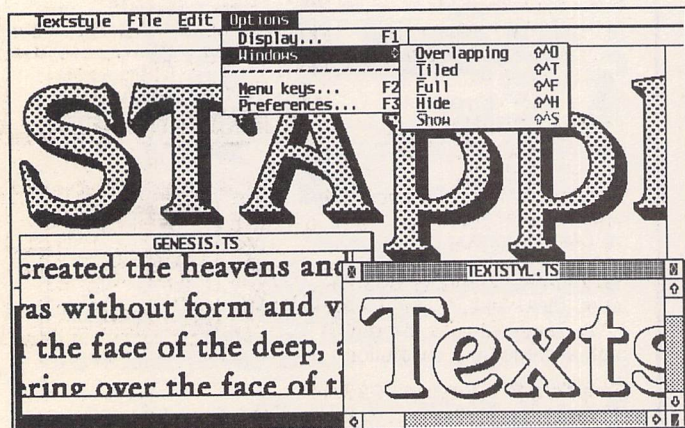
		Price	RRP
Canon BJ10E/200	(2 x 20ml refills)	£10.50	£13.99
Canon BJ300/330	(2 x 40ml refills)	£12.50	£14.99
HP DeskJet 51608A	(2 x 20ml refills)	£10.00	£13.99
HP DeskJet 51626A	(2 x 40ml refills)	£12.50	£19.99

HP Deskjet refills are suitable for use with all DeskJet models; the 51608A refill should only be used to refill HP single capacity cartridges and the 51626A refill should only be used with the double capacity cartridge.



Textstyle

Text stycler for Atari ST/TT/Falcon computers



Launch price: £14.95
From 1/2/94: RRP £19.95
Written by Jeremy Hughes

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- Create headlines and logos from GEM fonts or Calamus fonts.
- Import ASCII text containing up to 200 characters, or edit text within Textstyle.
- Text size and resolution can be adjusted freely.
- Font sizes can be selected in tenths of a point from 1.0 to 999.9 points (13 inches).
- Text styles include bold, light, italic, underline, outline, shadow, and pattern.
- Text styles can be configured to adjust bold increase, outline width, shadow offset, italic angle, text and shadow patterns etc. The angle of italicized text can be adjusted in 1-degree steps from 1 to 45 degrees (GEM skewing is fixed at 27 degrees). Patterns include 43 predefined patterns and 2 user-configurable halftone screens.
- Leading can be adjusted in 1-point sizes. Word and letter spacing can be adjusted in 1-pixel increments.
- Text can be left-aligned, centred, right-aligned, and justified.
- Styled text can be saved in Textstyle format (for reuse at a later date), or exported in IMG or TIFF format. Exported image files can be loaded into other programs or printed from Imagecopy.
- Advanced user interface including hierarchical menus, multi-key and user-configurable single-key shortcuts, pop-up menus, mouse-positioned alerts etc.

The Christmas International Computer Show

The Christmas International Computer Show took place on the 19th to the 21st of November (!) at the Wembley Conference Centre. As it covered a wide range of computers I wasn't expecting much in the way of support for Atari. But I can report that I was surprised at the turnout of Atari companies showing their latest offerings.

The show was held in one large hall and was well laid out. All of the companies involved reported a very slow show with a fairly low attendance even on the first and second days. I could understand the Sunday being under-attended as I had to trudge through a near blizzard to get to the show!

Walking around I could hear some music coming from the far side of the hall. This turned out to be the stand for Nintendo (UK). They had converted an articulated lorry into a mobile show stand with the trailer open to display their latest machines and games. Needless to say this was a very popular stand indeed.

I then spotted an Atari supplier. Gasteiner

(you can almost guarantee they will be at every show each year) had their usual wide range of items from optical mice to Falcons.

I then saw Best Electronics who, as many of you may already know, have been selling Atari spares for over ten years now and are really the only place to go if you want replacement parts for your machine as well as useful parts such as a monitor switch for £21, Falcon 44-pin ICD hard drive cable for £6.30, Mega ST keyboard upgrade for £65. They also had their usual array of Atari bits and bobs such as Atari belt buckles at £5.60, Atari sew-on patches for £2.80 and lapel pins for £2.80.

Moving on, System Solutions were in attendance with what looked like most of their staff manning the stand. They reported a very slow show with not a great deal of kit being sold.

New products that System had were Photo Show (Kodak Photo CD software) going for £39.95 and ConNect version 2. This fully featured comms package now has an English manual and was selling for £29.95.

Hisoft were in attendance with their usual stand. David Link was on hand as was David Nutkins to answer any programming ques-

tions. They also reported a slow show but a lot of interest seemed to be shown in the stand when I was there.

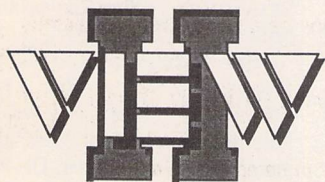
I almost missed the CGS ComputerBild stand but Ray Cross was there showing off DA's Vektor and also his new music package DigiTape. Also on display were: DA Vektor, DigiTape Lite, The Dream Team of DA's Layout and DA's Repo, and InShape Intro.

Next to the CGS stand were Analogic Computers who were showing off their Protar hard drives which they have just brought back into onto the UK market after their disappearance a few months ago.

Compo had a small stand and were showing Geneva. They also had a few interesting items that could be got for a bargain. These included: That's Write 2 for £99. This saved you £30 on its normal retail price and included a free upgrade to version 3.

The 16/32 PD library were also in attendance. They had their usual array of PD disks. Plenty of people were wading through their catalogue looking for the software they wanted. Also as part of this stand Lexicor were there showing their rendering morphing and animation packages. If you were looking to get into this field then today would have been ideal for you as Yat Sui had come over from Lexicor in the States to demonstrate Chronos 3D, Phase 4 and Prism Paint 2.

Dave Howell



Replace the Desktop's *Show File* function with a far more powerful one! Chock-full of features, **View II** is one utility you won't want to do without.

- View text files with bi-directional mouse scrolling, fast search, and screen or file print options.
- 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!
- Works on ST, STE, and TT and with desktop replacements like NeoDesk 3! Falcon version due soon.
- Takes *no memory* when installed on a hard drive. When installed in RAM, it takes 48K or less!
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Easy Text Professional

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System requirements: double-sided disk drive, 1 Megabyte RAM. EasyText runs in both ST high and medium resolution.

EasyText Pro Vector - £39.95

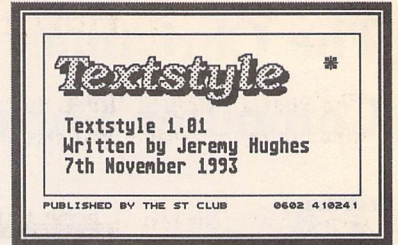
By using the features of SpeedoGDOS, Easy Text now offers text at any point size which can be rotated through any angle! System requirements: double-sided disc drive, 2 Megabyte of RAM, and a hard drive or 2.5 megs of RAM with a RAM disc. You'll also need a copy of Speedo GDOS.



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Stylish

Every so often an original program appears which crosses the usual divide between the strict compartments that different kinds of software are normally put into. *Textstyle* falls into the "why didn't anyone else think of that before?" category, and promises to be a useful addition to your ST's armoury of WP/graphic design/DTP utilities, as Peter Crush reports.



Textstyle

Producing fancy text effects or unusual headlines for documents usually means using expensive desktop publishers or graphic design programs, such as Outline Art for instance. And although some WPs now incorporate a choice of typefaces and sizes, you are normally limited to the fonts available for that particular software, and the GEM styling that can be applied. But your options have opened up now (especially if you're on a tight budget) because the ST Club has released a new utility program for producing text effects quickly and without ado. The program in question is *Textstyle*, and it comes from programming brain Jeremy Hughes. Jeremy needs no introduction to readers of STA, and in this latest project he appears to be merging his long-standing expertise in fonts (as manifested in *Fontkit*) with his newly developed wizardry in graphics and image formats as found in *Imagecopy*. The result is *Textstyle*, a new low-cost utility program available now from the ST Club at an introductory price of £14.95. *Textstyle* is a new breed of animal, a sort of limited cross between a DTP program and an Art program, using only text as its raw material.

Material Advantages

Textstyle is ideal for anyone who wants to produce headlines, logos or any other text-based artwork, and you will already see examples of its output peppered about the pages of STA. So even if you already have DTP software, *Textstyle* can provide output and effects not readily possible with your existing software. *Textstyle* comes supplied on a double-ided disk with a well written 40-page

A5-size printed manual complete with illustrations. It runs on any ST, STE, TT or Falcon, and in any resolution, although at present it works in mono only, no matter what screen is in use. To use *Textstyle*, first you enter text into its GEM window, then alter the appearance of the words by displaying them in any Calamus or GEM font you have. At this stage you can also decide on a new size for the text, and with vector Calamus fonts this can be big enough for just one letter to fill a whole A4 page. Think of the poster or banner production possibilities here! That's not the end of it though, for as well as having your text displayed in a virtually unlimited range of fonts, you can further re-style it with a wide range of options from within *Textstyle*, such as bold, italic, fill patterns, contour, shadows, etc. See the "Style" panel for the full details.

Although *Textstyle* uses GEM or Calamus fonts, you don't have to own Calamus itself, or any other software that uses GEM fonts. You get a number of both Calamus and GEM fonts supplied with *Textstyle* and you should have no trouble obtaining additional ones very cheaply. In fact the manual gives advice on where to get others. In general, *Textstyle* should be able to use GEM fonts which work with any other GEM-font program (such as *Timeworks Publisher* or *That's Write*). *Textstyle* should also be able to load any Calamus font which works with Calamus. Most ST users will be pleased to hear that *Textstyle* doesn't use GDOS! But how can you utilize the output from *Textstyle* within other programs? Easy: *Textstyle* enables you to save the results of its work as IMG or TIFF files for importation into your DTP or WP programs.

Conclusion

You've got to hand it to Jeremy Hughes, he's taken a good, simple idea and made a good, simple-to-use program out of it. *Textstyle* is ridiculously straightforward, you can't crash it and it's awfully user-friendly despite its many features and power. Whereas most design and font-based programs are difficult to learn, *Textstyle* is dead easy. There's no need for much study of the manual either - it advises you to learn by experimentation - but all the technical details are there if you need them. Your text can be given some very eye-catching treatments via alternative fonts and *Textstyle*'s effects, and all with hardly any skill or craftsmanship required on your part. The results will load into programs such as Calamus, PageStream, That's Write etc., providing an easy way to create original headlines or logos, and thus personalise your work.

On the negative side, there are two or three drawbacks if you really want to get critical. You can't add any freehand drawing or twiddly bits of your own, although this absence of complication speeds up the production of your "artwork" greatly! In any event, *Textstyle* is not billed as a program with drawing features. And whereas DTP and WP applications allow you to select blocks or part of the text to re-style, with *Textstyle* you have to apply the same treatment to the whole (up to 200 characters of) text. I understand that in future versions of the program Jeremy has plans to expand *Textstyle*'s capabilities in this area, so it may be possible to have different letters or words in alternative fonts, sizes or styles. Come to think of it, some ability to do simple fatbits type editing

would be very nice too. The final minor moan is that there isn't a direct way to print out your creations built into the program. This is no problem if you already have *Imagecopy*, which must be the best way to output image files to a wide range of printers, and at any size you want. You can use the accessory version of *Imagecopy* to do this from within *Textstyle*. If you don't have *Imagecopy*, (and as a "serious" user you really ought to!) importation of the finished artwork into suitable DTP or WP software also solves the printing problem.

The ST Club's upgrade policy is always very fair, so when a new version is produced you will be able to obtain it very reasonably going by past experience. The long term aim for *Textstyle* is for it to develop into a fully-fledged program with features like those found in *Outline Art*, where text can be shaped and made to follow curved contours, etc. This and planned capabilities for colour support, the use of alternative font formats such as *Speedo*, and other embellishments under consideration, will make *Textstyle* a program to be reckoned with. The ST Club definitely have another winner on their hands.

Points for:

- ✓ Reasonably priced
- ✓ Extremely easy to use
- ✓ Large range of fonts available
- ✓ Many new and user-definable effects/styles possible

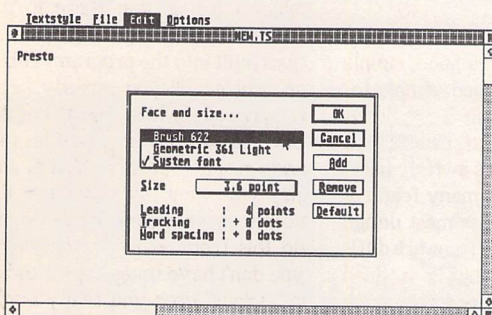
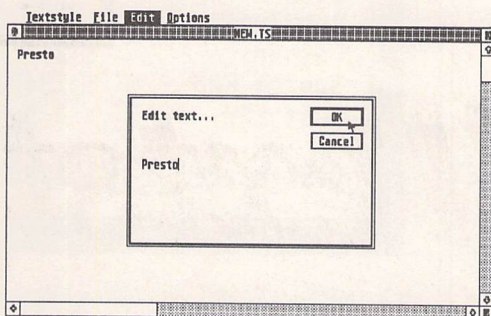
Points against:

- ✗ No built-in printing facilities at present (but you can use *Imagecopy*)

How It Works

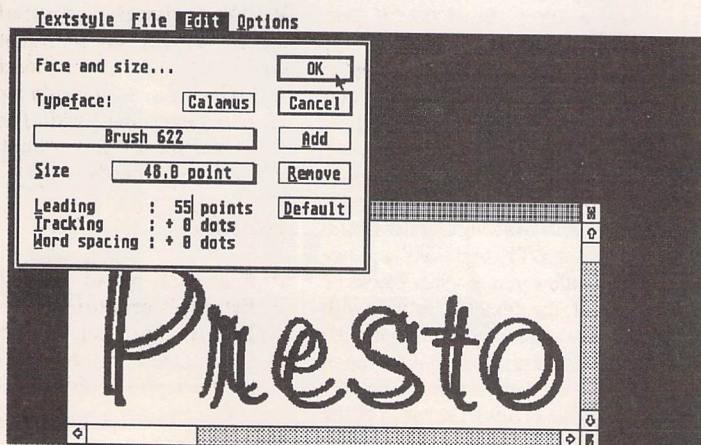
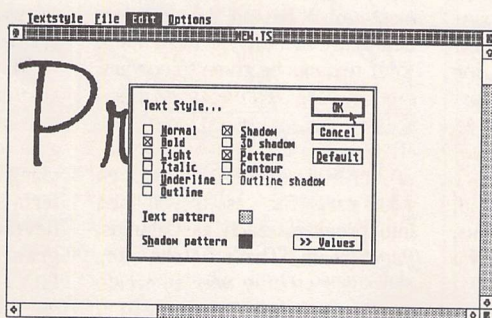
The easiest way to illustrate Textstyle's operation is to run through the creation of a small and completely fictitious logo.

Step 1: Enter your text (up to 200 characters long if you want, but just one word here) direct from the ST keyboard, or you can load text from disk. It's shown initially in the ST's usual system font, and wouldn't exactly cause much excitement in this state. So let's re-style it!



Step 2: To restyle the text you utilize Textstyle's "Font" menu to load in a new font of the required design. A number of Calamus and GEM fonts are supplied with the program, and those loaded appear in this pop-up menu. Plenty more fonts are available from PD and commercial sources.

Step 3: Once you see what your text looks like in the new font, you can change the height of the letters, and various styles and fills can be applied to the text, as controlled by this "Style" dialog. You can try out many of these in combination, and any changes made appear straight away.



Step 4: Adding shadows falling in any direction and of user-defined depth really makes the letters stand out. If you don't like the result it's easy to change it again with many subtle adjustments possible, such as the degree of boldening and the exact slope of your 'italic' text.

Textstyle's Important Features

- ✓ It instantly creates interesting-looking, user-styled headlines, logos etc. on your ST/STE/TT/Falcon screen from GEM or Calamus fonts.
- ✓ It imports ASCII text from a disk file, or you can type it in direct from the computer keyboard and then process it.
- ✓ A wide range of fonts is possible; some are provided with the program or you can use the many PD or commercial ones available.
- ✓ The size of your finished lettering can be anything from 0.1 to 999.9 points, in 0.1pt steps if you use Calamus vector fonts.
- ✓ Text styles you can apply include bold, light, italic, underline, outline, shadow, 3D, contour and pattern, and most will work in combination.
- ✓ You can adjust the amount of boldening, outline width, shadow offset, and italic angle of text by specifying your own values for them.
- ✓ Fill patterns can be applied independently to both text and shadow; there are 43 pre-defined patterns and two user-defined halftones.
- ✓ The amount of Leading between lines of text is adjustable in 1 point steps; space between words and letters is adjustable in 1 pixel steps.
- ✓ Results of re-styled text can be saved as IMG or TIFF format files to export, or in Textstyle .TS format for use within Textstyle again.

Saving Textstyle Images - The Techie Details

This feature allows you to save restyled text in an image format which can be imported into other programs (word processors, publishing programs, paint programs etc.), or printed using Imagecopy. Textstyle displays a dialog which allows you to select GEM IMG format, compressed TIFF format, or uncompressed TIFF format. Most Atari programs which load images can read IMG files, but non-Atari programs are more likely to be able to read TIFF files. The uncompressed TIFF option is provided for maximum compatibility (some programs which read TIFF files are unable to read compressed TIFF files), but this format is not otherwise recommended as it can create large disk files. The compressed TIFF format uses RLE compression rather than the (more efficient) LZW compression, since this is readable by a wider range of programs. IMG and compressed TIFF formats normally give good compression ratios with text images. If you have a program which doesn't support any of the formats provided by Textstyle you can use Imagecopy 2 to convert these to a different format.

Once you have selected an image format, Textstyle will display a file selector so you can confirm or change the path and name of the file you are saving. You don't need to add an IMG or TIF extension if you change the file name - Textstyle will add this automatically. A RAM disk can happily be used to save your image file into, and Imagecopy can access it there too if you want a quick print-out. Textstyle cannot load and edit text images, so if you save a text in image format it is a good idea to save it in Textstyle format at the same time. This way you can make adjustments if the saved image turns out not quite right in some respect (e.g. you might decide it is slightly too big or too small for its intended purpose).

Putting on the Style

THE "STYLE" option allows you to apply different styles to a text. These include standard GEM styles such as bold, italic, underline and outline, together with additional styles such as shadow, 3D shadow, and pattern. Even with standard styles, Textstyle offers far more flexibility than is possible with normal GEM programs. The amount by which a text is boldened, the degree to which italic text is slanted, and the width of underlines and outlines can all be individually configured. Here are some of the options:

Normal: Clicking on this option removes any styles that have been previously applied, taking you back to normality!

Bold: Boldens (thickens) text. The amount of boldening which is applied can be altered in the "style values" dialog.

Light: Lightens (thins) text. In contrast to normal GEM programs, (light text greyed out), Textstyle decreases the width of light characters in a way that is analogous to "light" typefaces (the standard grey effect can be duplicated using the pattern option).

Italic: This slants text for an italic effect, and creates a slanted roman style which is not the same as a true italic style. Textstyle improves on the standard GEM italic style by allowing you to specify the degree to which text is to be slanted, in 1-degree steps from 1 to 45. Textstyle uses a default value of 12 degrees, which gives a more natural slant than the standard GEM setting of 27.

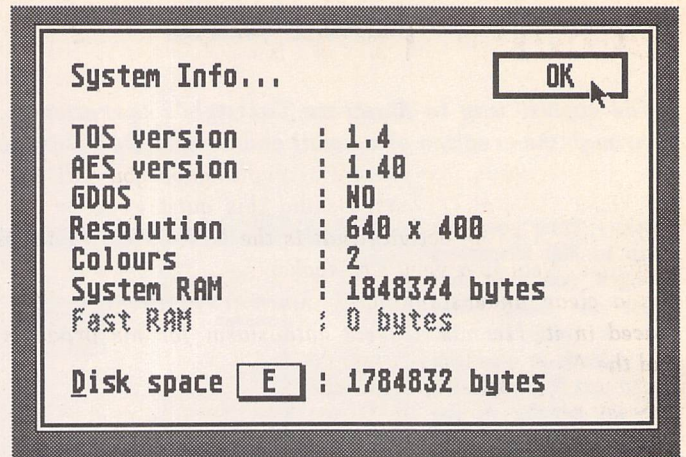
Underline: This option underlines text. Textstyle allows you to change the position and width of the underlining. It is normally best to change position underlining so that it is just beneath the descender line (an imaginary line linking the descenders, or tails, of characters such as "p" and "y"). The standard GEM effect positions underlining just below the baseline (an imaginary line on which characters without descenders appear to sit).

Outline: This option outlines text. Textstyle allows you to change the width of the outline. Normally, outlines should be 1 or 2 dots thick. With a 300-dpi printer, 2-dot outlines are often better than 1-dot outlines. Some laser printers have problems in drawing lines that are only 1-dot thick (the line breaks up in places). Shadows may be outlined so long as the text itself is outlined.

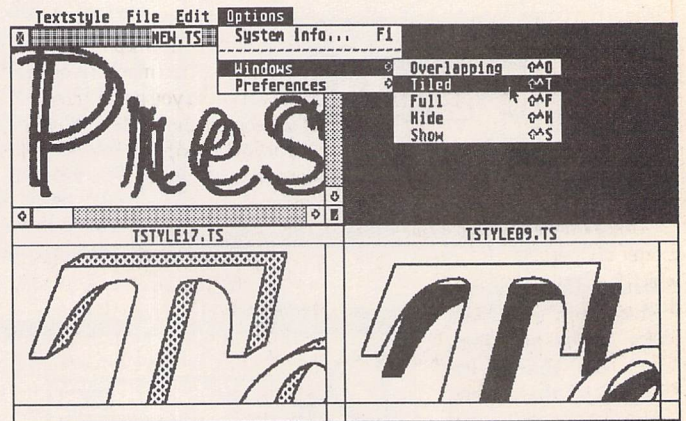
Shadow: This option draws a shadow behind text. Textstyle allows you to change the position of a shadow so that it's drawn at any angle from the original text, and its depth can also be defined. Shadows can be patterned with a variety of fills and the shadow style can be combined with outline and pattern styles to create a wide variety of effects.

Contour: Puts a discrete line around the character; both line thickness and separation from character are definable; may be used in conjunction with (3D) Shadow, Outline, Pattern.

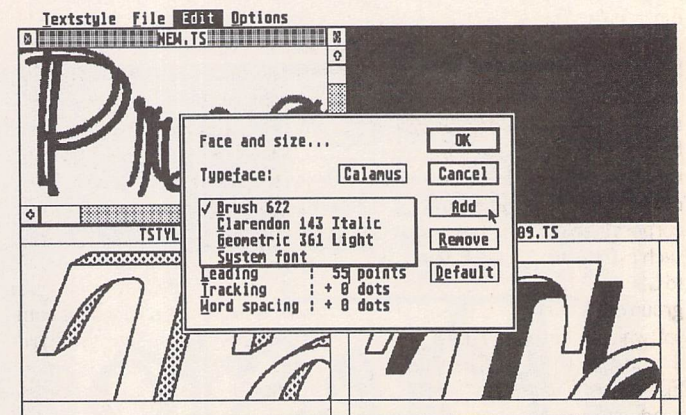
Product:..... Textstyle
 Version:..... 1.01
 Author: Jeremy Hughes
 Price: £14.95
 Supplier:.....The ST Club
 7 Musters Road
 West Bridgford
 Nottingham
 NG2 7PP
 Telephone:.....0602 455250
 Manifest:.....40-page A5 manual & D/S disk
 System:..... All STs, STEs, TTs and Falcons



△ This "System Info" option displays information about your computer system. The AES and TOS versions of your machine is also shown, typical of the extra value to be found in Textstyle. "Disk space" reports the amount of disk space on the current drive or partition, and a pop-up menu allows you to select a different drive or partition to get info on.



△ Textstyle can open as many windows as your version of TOS allows. Older versions of TOS allow no more than seven windows on screen at a time, but this limit is removed under MultiTOS, and also in Falcon versions of TOS. The way the windows are arranged on screen is determined by this sub-menu, and its operation is very similar to the way you can display windows in Imagecopy.



△ This option is used to load new fonts from disk. Textstyle displays a file selector which allows you to select a Calamus font (with a CFN file extension) or a GEM font (often with a FNT extension). Calamus (vector) fonts provide a full range of point sizes for one typeface, whereas GEM (bitmapped) fonts provide a single point size for one typeface: so with GEM fonts, 12-point and 24-point Bookman, for example, have to be loaded as separate fonts.

COMPANY PROFILE

Dave Howell

In a small village just outside of Huntingdon you will find the home of Neal O'nions. Behind this quiet exterior you will find a hive of activity that is the UK office of Compo Software. Neal is a very soft-spoken man and someone who has a clear understanding of his market and how he is placed in it. He has a great enthusiasm for his products and the Atari market as a whole.

At the moment Neal's home is overflowing with Atari kit and he tells me a move is just around the corner. As you walk through his home you can see why. Most of the rooms are taken up with Atari workstations used for various purposes. We sat in Neal's living room, which has been designated an 'Atari-free zone' and offers some calm in the very busy house that is Compo Software UK. I began by asking Neal what his background was before he entered the Atari market.

"I did a University degree at Exeter in Operations Research, which is a section of statistics dealing with the solving of management problems mathematically. After that I went into the automotive industry as an operations analyst, mostly programming IBM mainframes in a language called APL.

"From there I made the jump into personal computers in 1982, joining one of the first twelve or so IBM dealerships. This was about the same time that IBM were launching their first PC in the UK. In those days dealers had to go on a training course to be authorised to sell IBM PCs.

"I stayed as technical support for the company and then got into sales. In those days there wasn't a great raft of knowledge about the machines. I finally ended up in corporate sales selling to companies such as Esso and Shell. I then moved to GST which at the time was a group of companies. I got their software sorted out and then got them into distribution. They had First Word Plus and also some products from Antic and Migraph.

"When I first joined GST we focused heavily on the Atari market. We did all the Atari shows and produced Timeworks Publisher for the ST. I then became business director there. One of the things that I did do was eventually move GST out of the Atari market. They

were reaching a certain size and level where they were becoming the number one desktop publishing software vendor in the UK in terms of units, ahead of PageMaker and Ventura."

I asked if he had approached Compo with the idea of a UK office. He told me:

"I was very much approached by them. The Atari market is quite a small market so you get to know a lot of people in the market. While I was at GST I had built up more and more contacts, one of those being Compo.

"Compo has offices in the USA and in Europe which means that we are very well connected. We have the German office with German development. The Compo office in the US is half an hour's drive from Sunnyvale where Atari is based. They had been going about two years before the UK office was set-up which has now been running for about three years.

"We had a launch of the first products that we had at a Computer Shopper Show. At that time we had PC Speed, AT Speed and Write On. We are still selling those products today. The show was a launch and looking back we probably put a bit too much money into it. It is the only show that we have done where we haven't made much money.

"Initially we were very focused on selling to dealers. This has changed as we have become more like a dealer ourselves as the local sources of supply dry up."

I then asked if Compo will ever move into the area of selling complete systems including the hardware.

"We have tried to steer clear of selling computers but we have really been forced into it as people kept asking for them. We do however only really sell computers to existing users. We have not tried to sell computers to newcomers. We really cater for the more experienced user.

"The original start-up was very

COMPO Software



Neal outside his house - the home of Compo Software.

much as a distributor. If people now have a hardware need and are near a dealer we would push them in that direction. If they live near to Karl (Brandt - System Solutions) or Paul Rossiter or Mike (Cambridge Business Software) we will push them towards these companies.

"We do have some dealings with the hardware side as we sell memory up-grades, TOS up-grades etc. That involves bringing the machines in to do the work. Really, we sell the majority of our products to the existing Atari user base. We do not target the new user at all. The only time that it naturally happens that we get involved with providing hardware and software is for musicians. We have a very services-orientated business which leads us into providing systems for the more demanding customer bracket."

I then asked about his attitude

to his existing customer base. He had already said that customer service is paramount to his company. I also asked how dealing almost exclusively with existing users effects his business.

"We have a very good customer base. I like to think that customer service is very high. You always try and think of yourself like other companies that you respect. One of the ones in the PC market that I have always respected is Word Perfect because of their focus on end user support. That has stood them very well. We do put a lot of resources into that side of things. We do spend a lot of time with people on the phone sorting out problems."

One thing I wanted to ask about was the fact that Compo have done very little advertising in the usual sense. We do not see large-page advertising in the Atari

magazines that we all read. I asked Neal if this was a conscious decision on his part.

"We have got certain places where we can spend our marketing budget. Compo has done very little advertising, that is by design. The way we view the marketing mix is to put a lot of the money into the technical support side of things. We also have carriers and messengers for our product range who say that Compo is good and the product is good, and we view that as a way of approaching our marketing mix."

I then asked whether Compo, who are the UK offices of the parent company in Germany, find any conflict with distributing products from Gribnif.

"The biggest part of the split is Compo product. We do handle Gribnif product and we do have TOS 2.06. We have the UK licence from Atari to blow TOS 2.06 ROMS. We then sell them to people like Karl (Brandt). We have also just got the licence to blow TOS 4.04 as well."

I was under the impression that the TOS 2.06 upgrade was from Atari itself, but as Neal explained:

"TOS 2.06 is a split product. It is partly a board and partly the ROM. We produce the product for Atari. For various reasons it is beneficial to have a switcher board. Also with an STFM you have to have some logic on it as well."

I asked about the other side of the split in their product range between Compo's own and Gribnif's. I asked about his relationship with Gribnif and when he first knew them.

"I had dealt with Gribnif for a long time. With GST we took on NeoDesk. That is still with GST. We took on the other Gribnif products, most notably STalker."

I asked him what attracted him to STalker in the first place.

"I was getting so frustrated with the public domain comms programmes. I talked to Rick (Flashman - Gribnif Software) who sent me a copy of STalker. It was the first comms programme that I just plugged in and it worked. It had a manual and a GEM interface."

"Communications is complicated, there's no question about it, unless you've been doing it for years. For Joe Public communications is difficult. Of all the public domain software that is out there a lot of it is good, but it is fundamentally flawed. I haven't seen one that is a complete package, although I have heard that there is a good German shareware one that is coming out."

I then moved on and asked if there was any other non-Compo

product in the pipeline that we would be seeing shortly.

"Studio Photo which is for colour retouching, in the same vein as Retouché. This will be able to handle Photo CD and works in 24-bit colour."

I asked how much he was involved with the development of new products for Compo. I wondered if the German parent company did all the development work and just shipped the finished product to their offices around the world.

"We get very involved. I have just got a new version of That's Write 3. We have also been involved with the development of Studio Photo. Generally we get involved with the programmes, the documentation. As we have an American office this takes some of the pressure off us to do all of the English work."

"People do not realise how difficult it is to produce good documentation. It is always done under time pressure no matter how much you plan. One of the things we have switched to in our manual production is photocopying. The quality is now acceptable. What that allows us to do is much shorter runs, and we can get a second revision of the manual out much quicker."

I asked Neal if, while Atari's PR might not be the best in the world, he agreed that it is up to the third parties in the Atari market to decide if they can sell a word processor or an accounts package or a DTP programme. This, surely, does not fall within Atari's mandate at all.

"Take someone like DELL as an example. They are producing a PC just like Joe Bloggs, IBM, whatever. They do not sell the concept of buying a PC. Also they do not 'solution sell', they just sell boxes."

"That is fine when you have a market of that shape. The Atari market is very different. The analogies come more from Apple. In that you have a closed architecture with one manufacturer in it. Apple have had to do a great deal of pioneering work to get through. Atari are in a similar position."

"If we take the games issue, games has been a core part of Atari UK's strategy. To some extent it was in the US when they were successful. In Germany it wasn't, the high end DTP market that everybody talks about was. It was more like computers sold to students. If you wanted a word processing computer as a student, certainly three or four years ago in Germany an Atari would be high on the list. To some extent this is

because the PC has taken longer to dominate the German market."

I wanted to ask Neal about his thoughts regarding the stigma that the Atari machine has. We all know that if we tell colleagues that we have Atari machines they leap to the conclusion that we are all playing games and nothing else. If we were serious about computing we would have a Mac or a PC sitting on our desk.

"The stigma doesn't exist in the music market, not at all. I actually don't hold with this 'oh it's just a games machine' - I don't see that as a problem in terms of stigma. Take DTP as an example. It will succeed by delivering something that you cannot get from alternative platforms. As a games machine with a £159 entry point, the ST that you can plug into your TV is more than just a games console that you could be paying a similar price for, and it has cheaper games. This makes it still an interesting proposition."

"In a music studio a 2.5Meg ST with Cubase 3 is a very, very interesting proposition when you look at the price, and I think it is only in the area of DTP where it is difficult to see a natural route for new users into the market now. With the current product range that Atari have it is no longer a natural platform for desktop publishing."

I then said that if we look at the DTP market as it stands Atari software can hold its own with the other heavyweights in the market on other platforms. I suggested that the problem is that the hardware that we have has lagged behind somewhat and hinders the market's development.

"I think that the hardware has moved in a different direction. I am sure we will talk a bit about the Falcon. The Falcon does not do anything substantial for desktop publishing in its present form. The hardware has moved away from some areas, one of those being DTP."

I asked if, that being the case, Atari were trying to provide a machine that is all things to all people.

"No, I don't think they are. I think the market is trying to make them all things to all people. If you look at the marketing that Atari produce for the Falcon it is not heavily desktop publishing orientated."

"I think it is worth comparing the Mac to the Falcon because it is a very interesting comparison. What we see is that the Mac has a nice user interface and a good set of common standard software. Most of all you see a performance

degradation between an Atari with a simple operating system and a Mac running System 7.

"We think that to get a comparable Mac to an ST you would need to double the clock speed of the Mac and move the processor up by one. To give an example, if you have a 16Mhz 68030 Falcon then you need a 32Mhz 68040 Mac to get comparable performance from the application that is running. I think the Falcon is much more interesting and innovative than has been picked up on yet."

I asked Neal how he saw the Falcon incorporating itself into the existing Atari product range.

"I think that the ST has a place and it continues to have a place. I think the Falcon's place is completely different. The 'problem' with the Falcon is that as it is, it is not just a tuned up version of previous computers. It is something completely different. We have not yet seen the applications that show you why it is such a different computer."

"This is the whole issue behind the Falcon. At the moment it is just a slow TT, because at the moment there is nothing that unlocks this magical integrated environment of 68030 plus DSP processor that really makes you stop and say wow!"

"The first of these programmes is starting to appear behind the scenes. I saw Cubase Audio a couple of weeks ago for the first time. It is just an absolute killer, phenomenal! That is where you see that the Falcon is not just another ST. You also see that you can't compare it to a Mac or a PC. You could load a PC with enough widgets and bells but by then you have a £10,000 machine."

"There is a lag by which new technology turns into computer sales. An example of this is the Mac which was floundering around for a long time before Aldus finally shipped Pagemaker."

Expanding on that point, I asked how he saw development for the Falcon progressing over the next few months and years and how difficult it is to produce software that takes advantage of this new radical design.

"Because the Falcon has a simple operating system that is clearly defined by Atari, it means that you can develop with confidence. There is no concept, for instance, of putting a DSP on a PC in a standard consistent way. As a developer you know that the Atari mouse will always have two buttons, there is no question of that. In terms of the

ways it interfaces with the rest of the world it is a lot more standard."

I then asked Neal about Compo's positioning in the Atari market itself and what future plans they had.

"Compo specialises in the non-leisure uses of Atari machines. We have no ambitions to move outside of that. We are not chasing the Amiga, nor are we chasing the PC. We are committed as an Atari company. The shape of the company is to some extent dependent on how Atari develops. We will always be focused on the Atari market and will not make the mistake that GST made, if you like, where the Atari market became an inconsequential part of the business."

One of the questions that I wanted to ask Neal was the same point I had raised a few weeks earlier in my interview with Karl Brandt at System Solutions, namely what his thoughts were about the public relations image of Atari itself. I wanted to know if he thought they had got it right. Karl responded by saying that they had a strange attitude to PR in that they were very open. If there were problems they were instantly known in the Atari press, etc. But Karl would have liked to see Atari put a bit more effort into the PR side of the business. I wondered what Neal's thoughts were on this subject.

"I think that you have to look at it in the context of other people, other companies and other markets. Every computer since the year dot has had some problems with it be they Atari, IBM or whatever. What is different with Atari is that the machines are new. We are not seeing a machine that has been shipping for a year or two in the States or in Europe. We are seeing the machines as new, first batch off the production line. When you take into consideration the number of machines sold of such new technology it is superb. I don't think that message has got across.

"I dare say some people have had some problems but Atari have been extremely good at fixing problems when they occur. They have been very good at looking after the first users and have put themselves out no end. Some of my customers have rang them up and have said that Atari have shipped their machines without MultiTOS or Speedo GDOS. Atari have sent them on. For a hardware manufacturer that is a phenomenal service. So no, they are doing a lot right.

"Atari are not angels. There are things wrong with any business.

There are things that we do wrong here at Compo. There are things that Karl (Brandt) does wrong, there are things that HiSoft do wrong. If we are honest we can look at our businesses and see things that we are not doing right."

Speaking of mistakes that have been made by business. I asked him if he thought it was a mistake to put the Falcon in the old type of case.

"There has been a lot of talk about a new case for the Falcon. This is an absolute, complete and utter red herring. The current Falcon works: you buy it and put it in a new case. It is not an issue."

I then asked him if there was anything that he felt that Atari had done wrong and that could have made a great difference to the company we all know today.

"We saw the ST come out in '85. We saw it develop too slowly. The TT came out and we missed it in the UK. There was a similar situation with the Mega STe. What I want to see is the Falcon develop at a faster pace, and a better planned pace than the ST range. It took a long time for machines to come to market. What I hope is that when we do see the next Falcons in the range they come in a timely way and they come in the right sort of way, so we don't see quantum leaps with nothing in the middle."

One of the next packages that Compo will be distributing will be an alternative to MultiTOS in the shape of Geneva. I asked Neal about operating systems and their place in the computing world.

"One of the good things about the Atari, and this is true also for the Mac, is that they both have the operating system built in. They are completely load and go machines. In my opinion this is essential for consumer mass market machines. In the area of home Multi Media the Falcon has to be as hassle-free as possible.

"One of the problems with a PC with Windows installed is that the user probably bought the machine with Windows pre-installed. If they did, as soon as they trash the wrong files from their hard disk they have had it. They have got to go back and re-install Windows again, but of course they didn't install Windows themselves in the first place, so they are stuck.

"I think that these operating system enhancements are quite valid. Because by the time you are at that level you are talking about a certain class of user that can handle it. But I think that it is essential that the core operating system is ROMed."

I asked Neal what were Compo's future plans.

"Particularly with what I would call our core products, i.e. our word processors, they are still in active development. At the moment we are looking at version 3 of That's Write. We are working with late beta versions at the moment but we are not talking about release dates yet.

"We already know that there will be a version 4 and we already have a strong idea of what will be going in version 5. There may be a version 4 next year and a version 5 the year after, they will come, the product will go on. People who are investing in Atari and in word processing can do so with some degree of confidence."

We stayed with the theme of word processing. Compo's word processors have a very large user base. I asked Neal why he thought that his programmes were the preferred choice of so many users.

"That's Write is a comfortable programme to use and offers the type of word processing that Atari users do. I still think that it is the best on the market. There are ones that are better as pure text crunchers when you don't care about the output. There are ones that will allow you to do small complex layout jobs. But for bog standard word processing, letters, faxes, reports, this sort of stuff; I don't think we have any competition at all."

I asked about CompoScript. This is one of those programmes that is very useful to those that need it and can see the benefits that can be had by having this programme on your hard disk, but is a bit of a mystery to everyone else. I asked Neal about CompoScript and where he thought its strengths were and any future development that he has planned.

"The real benefits from CompoScript are had with applications such as PageStream. PageStream, while using Type 1 PostScript fonts, doesn't RIP them very well at all. The programme allows you to proof your job before it goes to your printer, be it on a low-end dot matrix or one of the high-end laser printers such as the Laser Jet 4. CompoScript does the job it was intended for and it does it today.

"The logical way for CompoScript to develop is to start to put level 2 extensions into it such as colour. At the moment that is not really being driven by the market. I am not being asked for colour in CompoScript in a big way.

"Also, CompoScript came about

before the new Speedo GDOS. Speedo actually gives people professional quality fonts that are much more accessible. To some extent CompoScript becomes more of a specialist publisher's proofing tool. At the moment it does that job well and there is no great push to take it a stage further."

I stayed with the subject of font handling. Speedo GDOS is now with us but is still only just making its mark. I would have thought that the programme would have burst onto the scene with much more impact, as it will revolutionise the way some ST users handle fonts on their systems, especially if they are struggling with GDOS and their DTP application at the moment. I asked Neal if he thought Speedo would have the impact it should.

"The applications lag behind. What has happened is that we had GDOS which had problems, and the developers went their own way. Speedo GDOS comes in which needs the applications' support to make it worthwhile.

"Also, Speedo GDOS is absolutely useless for word processing. Why? Because it gives you purely graphics printing. Not the right solution. We think we have a much better solution with That's Write 3 which is to use the Speedo fonts through our own RIP and also mix them with the printer's internal fonts. This will mean we will be able to support things like the HP Laserjet 4's internal scalable fonts and have screen Speedo fonts that match the font we are using to print out."

The interview ended here. I would like to thank Neal for his warm welcome, and like many of you out there I cannot wait to see what Compo will bring us in the future to make our sessions with our Atari machines more interesting and productive.

Compo Software (UK) Ltd are:

Neal O'Nions - Managing Director.
Deborah Shipp - Administration.
Nigel Shearing - Accounts.
Tim Jordan - Technical.
Richard Watts - Technical.
Fran Flaherty - Dispatch.
Vi Flaherty - Dispatch.
Sarah Church - Order Entry.
Sue Edwards - Accounts.
Eileen Bridgman - Assistant.

I have been using Pascal for professional and personal programming after an initial dalliance with Spectrum BASIC ten years ago. Its advantages are clear to non-programmers, less so to dedicated hackers. In a world where hacking into a machine's entrails is still de-rigueur despite ever increasing hardware performance, the strongly typed and abstract nature of Pascal is dismissed as not allowing sufficient leeway for the programmer to do his own thing.

When I see those lovely bombs on screen after another piece of free thinking has been let loose, I consider the cost of that freedom! Anyway, I'm not here to convert anyone, just to take a look at a really rather nice implementation of Pascal from those capable chaps at D-House and Hisoft.

There have been a number of attempts at doing a Pascal for the ST. I have bought and used two of them; Metacomco Pascal and Prospero Pascal for GEM. Both are capable, well implemented versions of the language with good documentation and examples. For a Pascal addict though, one could only look at Turbo Pascal on the PC with extreme envy. It has been developed through many incarnations but has kept two important features: the integrated development environment and its astonishing speed of compilation.

The speed was a major bonus for one who can never get anything right first time. On a floppy based system MCC and Prospero grind away interminably at compile and link time. Even the expensive addition of a hard disk did little to speed the process up in real terms. There was always a gulf between changing the code and seeing the bug fixed.

After paying out £90 for MCC Pascal and £80-odd for Prospero, I was naturally reluctant to fork out another £65 for a package to gather dust in the cupboard. I was wooed over by a helpful Hisoft team at the Wembley show earlier this year.

After being allowed to stand and read the manual on their stand while everybody marvelled at Tina Turner on the Falcon, I was sufficiently confident to part with my cash. Reading the manual in more depth on the train home, I was beginning to wonder why I hadn't bought it earlier.

The Package

Scepticism crept in when I read the claims regarding Turbo Pascal

I often wonder why I am different from other people! I use an Atari ST in preference to a PC or Mac, I like to ride a motorcycle, I prefer old mechanical things to whizzo electronic gadgets, and worst of all, I like to program in Pascal when the rest of the world uses 'C' or BASIC. I am still allowed out on the streets, despite all my eccentricities though. Perhaps I'm harmless after all!

HiSoft HighSpeed Pascal

Reviewed by Graham Curtis

compatibility, but HighSpeed Pascal genuinely does have links with the original Turbo Pascal pedigree. HighSpeed is written by D-House, a Danish software company. Their managing software engineer Cristen Fihl has worked in the Turbo Pascal team with Anders Hejlsberg who was

mainly responsible for the early versions of Turbo Pascal.

£65 (show price perhaps?) buys a neat A5 ring binder containing two DS disks and a manual with all the usual Pascal and GEM reference material. What makes this package different is its position bridging the worlds of Atari GEM

and PC DOS Turbo Pascal, perhaps even Turbo Pascal for Windows. In addition to the GEM AES and VDI bindings, the system also implements the Turbo Pascal graphics library so that compatibility can be achieved across the two platforms. This could also be achieved with Prospero Pascal for GEM programs, but there are few people who admit to using GEM on the PC these days.

As is often the case with well thought out packages, the contents list of the two DS disks looks deceptively small.

- HSPASCAL.PRG: Integrated development environment version of HighSpeed Pascal
- HSPC.TTP:Command line version of above
- PASCAL.HLP:.....Help file
- PASCAL.LIB:.....Library units

Other files contain a multitude of demo programs and 'Turbo Pascal Units' which are all detailed in the manual.

Features

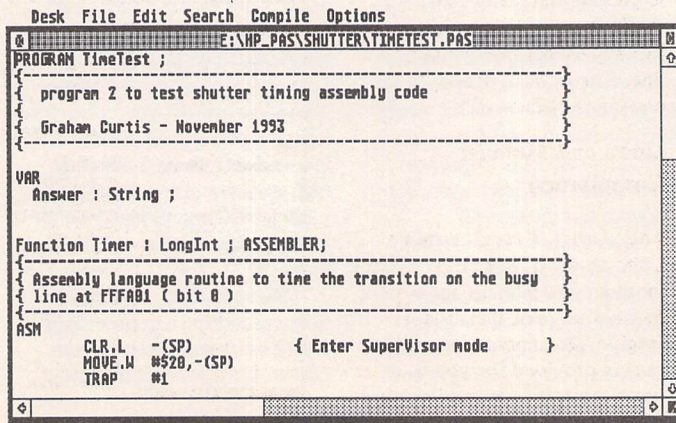
To avoid repeating the Hisoft advertising literature, I will try and concentrate on the features which, for me, make this version of Pascal stand out from the crowd.

Compilation Speed

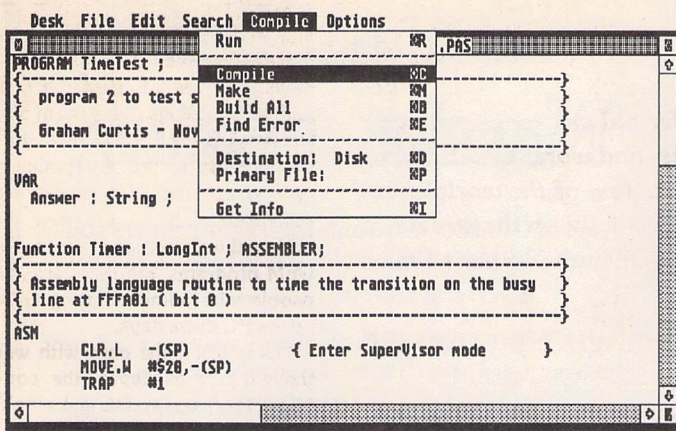
Hisoft claim 20,000 lines per minute for the compiler and I have no evidence to refute this as I have no 20,000 line programs yet! I do know that it is considerably faster than other compilers I have used. It enables a similar interactive 'trial & error' programming style that can be used with an interpreted language. Whilst this programming method cannot be condoned professionally, it certainly gets the job done more quickly and takes the sting out of moving to a compiled language. A beginner moving from BASIC would hardly noticed the difference.

Help System

This really is something in a package costing £65! Double click on a word in your program to highlight it. Press the 'help' key and - hey presto! - context-sensitive help. Key words in the help pages are underlined and clicking on these brings up more help pages. The manual is rendered almost unnecessary as the help pages even contain example code which can be pasted into your own programs for speedy development. It is almost possible to create an application from scratch using just the help system! For reference work



HighSpeed Integrated Development Environment (HIDE)



Compile/Run Menu

the system is so much quicker than wading through the manual. Full marks.

Editor-Compiler Integration

Speed and a good help system are just part of the philosophy. The integrated compiler-editor really comes to your rescue when things go wrong. When a compiler error occurs, compilation stops and the offending section of code is highlighted. Pressing Help takes you into the help system where you can gain clues on your mistake. Once all the syntax errors have been chased out and your code actually compiles your program can be run directly from the editor. If the code fails at run time and crashes the computer the development environment will trap the error and return you to the editor. Back in the editor, it is possible to ask the system to find the error for you.

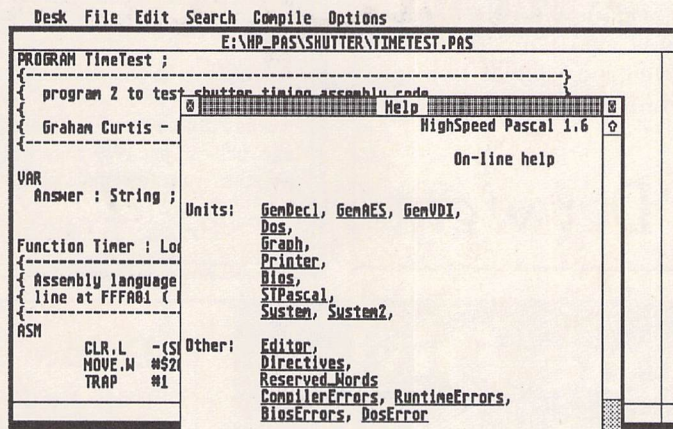
If the runtime error occurred in your own code, the problem will be highlighted as for the compilation error. The system is not quite a source-level debugger, but it is very useful for those brought up on classical (read unhelpful) compilers.

Having used Tempus for several years, I was dreading using the integrated environment for the first time. Yet again I was pleasantly surprised. Scrolling is very quick and there are some very nice features such as block indent/outdent. A command-line version of the compiler is available for those who really must use their own shell or just prefer to live in the past. I am happy with the comfortable life, so it remains unused to-date.

Inline Assembler

This is one for the hackers! Most Pascal compilers allow the use of inline code, which usually means squeezing a few assembly

language lines into your code with very little in the way of integration. This one is very reminiscent of the Fast BASIC system (what happened to that?) where you can write 'normal' assembly



Top Level Help

language and create a Pascal procedure or function with it. Labels and loops are permitted, and passing variables back to Pascal is made easy with the @RESULT variable. This is much quicker and easier to debug than traditional methods. I have used the feature to good effect in my camera shutter timing program, which needs a fast supervisor-mode timing routine. The code is shown in listing one (page 34 Issue 37).

Units and Modular Compilation

The Turbo Pascal concept of Units strays from standard Pascal modular compilation but is implemented so well that it is easy to forgive. Documentation and support is provided for you to create your own pre-compiled units which can be linked with your main program. Having pre-compiled units greatly improves the

speed of code development because the units simply have to be 'bolted on' to the main program after it is compiled. A general purpose unit, such as the GEM interface, can be linked to many different different programs without modification and its source code needs to exist only once. With only one copy of a particular piece of code, maintenance problems are considerably reduced. To gain access to a unit a program simply has to have a 'uses' statement in its header declaring the name of the unit.

The Bad News

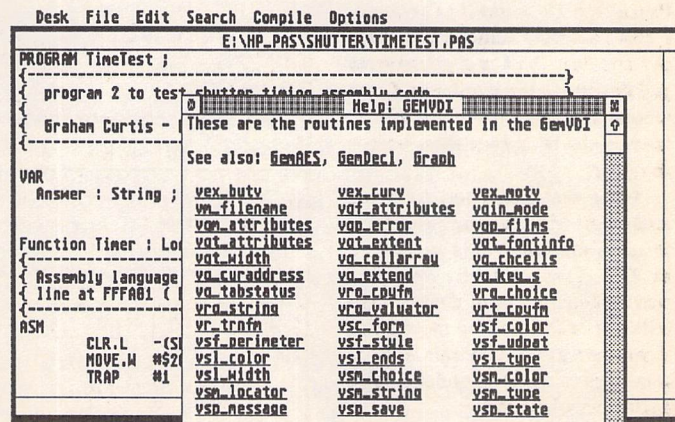
After waxing enthusiastically about HighSpeed Pascal I suppose I must think of some of its disadvantages. Taken in isolation, if this is your only Pascal compiler there are very few problems. However, in becoming a 'stan-

familiar sounding names do not do familiar things. For instance the INT function returns a REAL value. It simply returns the integer part of a real number in a real form. This one always catches me out!

In Conclusion

For those who crave more structure and portability than BASIC can provide the choice is between Pascal and 'C'. For anyone who has to write programs on a number of platforms and has yet to succumb to the 'Esperanto machine-code' world of 'C', HighSpeed Pascal just has to be the answer. There seem to be no real penalties that I can find. My camera shutter testing program in its full version, with all the GEM bells and whistles, compiles to just 24k, with an edit-compile-run cycle of less than ten seconds. I won't be buying another Pascal compiler for a while!

Product:.....HighSpeed Pascal
 Price:.....£65
 Supplier:.....HiSoft
 The Old School
 Greenfield
 Bedford
 MK45 5DE
 Tel:.....0525 718181
 Fax:.....0525 713716
 Manifest:.....Two d/s disks,
 manual in A5
 ring binder



GEM VDI Help

Fontpac Plus

The Fontpac Plus series is essentially a budget-priced collection of bit-mapped fonts for the Atari ST. There are two sets for GDOS applications and one each for Redacteur 3 and Signum/Script.

The Signum Set comprises 14 or so fonts for all printer resolutions: P9, P24, and L30, along with the equivalent screen (E24) fonts. Please order by printer resolution code: P9, P24, L30. **Price: £6.95**

The Redacteur 3 Set comprises 12 or so proportional printer fonts for both 24-pin (180dpi) and laser/inkjet (300dpi) printers with corresponding mono-spaced screen fonts for mono and colour monitors. All fonts are supplied at 10 and 12-point; some are also provided at 20 and/or 24-point. **Price: £6.95**

The GEM Sets are available for 24-pin printers at both 180dpi (Q1), 360dpi (Q2), and also for laser/inkjet printers (L2). Screen fonts are provided for both medium and high resolution. There are around 10 fonts per pack, and the range of point sizes for each resolution: typically 8-24 for the high resolutions and 10-40 for the 180dpi sets. Two GEM sets are now available: Derwent calligraphic fonts, and Castleton and Matlock Roman. Please order by printer resolution code: Q1, Q2, L2. **Price: £9.95.**

Castleton Derwent

Fontpac Plus Newsletter Setter

A set of GEM bit-map fonts for 300dpi printers and hi-res screens, designed for use in reports, CV's, adverts, newsletters and magazines.

There are five typefaces comprising nearly sixty fonts in all, with point sizes ranging from seven to twenty-eight. Included are:

- three 'classic-style' typefaces (Century, Castleton Roman and Souvenir), each with its own 'true italic' version and two of them with a 'Gothic' (sans serif) variation
- an elegant 'calligraphic' typeface (Derwent, based on the 'Foundational' hand) that will add a touch of distinction to subheads, headings and boxouts
- an 8-point monospaced font useful for listings and tables
- five alternative Swiss fonts
- an alternative 12-point Bullets font

The smaller point sizes of Castleton, Souvenir and Derwent have all the European accented characters implemented as well as 'f ligatures', M-dash, N-dash and Maths symbols.

All the fonts have been used in the ST Club magazine 'ST Applications'. Used in conjunction with a DTP package such as Time-works Publisher or Easy Text Pro and a text manipulation package such as Textstyle, they will help you produce documents with a distinctly professional look for a very modest outlay.

Price: £14.95 from the ST Club

Catalogue Disks and Demos

Catalogues

□ A.01: AtoZ Disk

This disk includes alphabetic lists of the items on the disks in this catalogue, plus listings of the files on all of the clip art disks in this catalogue.

□ C.01: Standard and Licenseware Disks Catalogue

The full range of disks from our catalogues up to v13 are now designated as Standard Disks. The disk codes for these disks are made up with three letters followed by two or three digits (ABC.123). Because these disks are now copied to order you need to allow five working days for us to send out your order and these disks now cost £2.75 each (£2.00 to ST Applications subscribers). This disk will be updated irregularly to include newly submitted disks that do not warrant inclusion in the Premier Range of disks.

□ C.02: ST Computer Disk Catalogue

These disks are compiled by the German Atari magazine ST Computer. They have the disk code prefixes STC and are copied to order for a 5-day delivery on your order. Disks cost £2.75 each (£2 each to ST Applications subscribers.) This disk will be updated when we get new batches of German PD and Shareware disks.

Demo Disks

There are demonstration versions of some FaST Club commercial titles. In most cases only the save function is disabled.

- D.01: Address demo (See advert on page 31)
- D.02: Fonty demo (See advert on page 19)
- D.03: Fontkit Plus demo (See advert on page 22)
- D.04: Imagecopy Colour demo (see advert on page 11)
- D.05: Imagecopy 2 demo (see advert on page 10)
- D.07: Redacteur colour demo (see advert on page 42)
- D.08: Redacteur mono demo (see advert on page 42)
- D.09: Textstyle demo (see advert on page 45)
- D.10: X-Debug demo (see advert on page 29)

These disks just

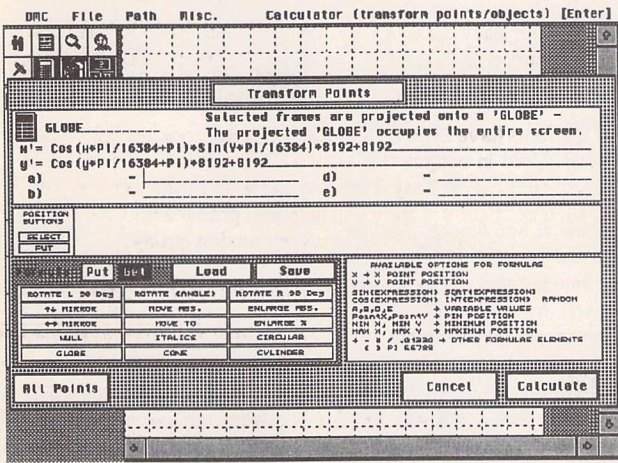
75p each.

FaST Club
7 Musters Road
West Bridgford
Nottingham
NG2 7PP

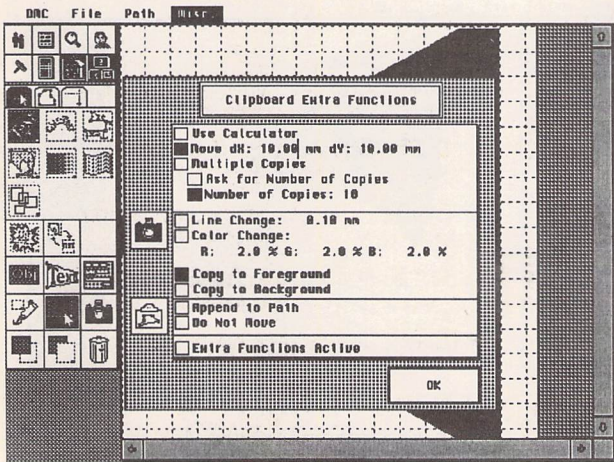
Outline Art 3

The world's favourite graphics package has finally come of age. Outline Art 3 promises an improved interface, 24-bit colour, on-line help and PostScript export - at a price.

Nial Grimes reaches for his trusty credit card...



The calculator comes ready loaded with a whole host of powerful effects, such as 'globe', 'cone' and 'italics'. Theoretically it is possible to write your own functions, although I think I'll give it a miss!



The clipboard is a formidable tool. By using the multiple copy and colour adjustment tools it's possible to create some stunning shadow and rotation effects.

Outline Art was a landmark graphics package. I remember vividly the very moment my first piece of dynamically greyscaled, warped text appeared on screen and I've been a complete addict ever since. But as much as fans enjoy using O-Line, most people will agree that it does have its fair share of faults - a lack of flexibility being the main complaint - but where else is there to turn?

Well, an Inside Info article was enough to convince me that Outline Art 3 deserved a look and, unable to resist the temptation, my credit card details were duly rammed through the fax machine to DMC in Canada (don't you just love modern technology?). No more than a week later a large O-Line 3 shaped jiffy bag popped through my letter box and the rest, as they say, is history...

Quit Waffling, Nial!

Like most publishing software these days, Outline Art 3 is a bit of a monster when it comes to memory. You can just about scrape through with two meg, but it's a lot more comfortable with four and you'll need that much to make any use of the on-line help system. Even with this amount of memory, only 256K is available for drawings - the rest we must assume is used for caching.

For the uninitiated, O-Line revolves around three Calamus-style - i.e. long, oblong and to the left of the screen - icon panels. Unlike most vector art packages, it has no drawing tools as such and instead all shapes must be constructed from 'paths'. The standard procedure for putting together a line drawing goes something like this - switch to the path control panel, draw the shape you need, switch back to the main panel and define a colour on the way.

If you've seen grabs from O-Line before, it's likely you've wit-

nessed some of its spectacular projection facilities. This is the process whereby one or a number of shapes are squashed to fit neatly onto a 3D grid of your design and really is a piece of cake once you've made your way through the first design. Just pop together a control path, select the objects you want to squeeze into it and hey presto - one extremely wobbly piece of vector art.

Beyond projection, the program's main strength has always been text manipulation and version three retains all of the same powerful tools. You can run text along a path, place it at an angle or even create a circle of words. The only font format it will think about looking at is CFN, but that's not a problem these days - the public domain positively groans with high quality Calamus fonts. A mini editor is to be found built into the text dialogue these days, nicely busting the two-line limit of yore.

Other changes to the text dialogue include the tint settings, which have been replaced with shade buttons and it's at this point that you'll probably encounter the colour dialogue for the first time. It's a no-frills affair and is much simpler than the SL mixer and Calamus colour lists can be loaded if you don't feel like setting up your own palette. The colour support really comes into its own when you begin to play with dynamic fills, or graduated fills as they are now known. O-Line 3's speedy display keeps up remarkably well with complex objects - fills that are updated in seconds take SL aeons unless you're willing to run in mono!

The work screen can be viewed at a huge range of different zoom levels. The package shares a Calamus-style magnifying glass which can be dragged around an area to edit. The maximum doesn't quite stretch to SL's incredible level, but it's still one huge leap ahead of most programs

on the market. This comes in particularly handy for tracing. Although the process isn't automatic, IMG files can be loaded into the background and outlined by hand at any zoom level.

One piece of good news is that O-Line fans won't be faced with any major culture shock during the upgrade because the interface remains almost intact. Rather than opt for a new manual, DMC have decided to supply the old one for the time being and supplement that with an on-line help system. This is not only context sensitive but also features hypertext links which makes it extremely easy to jump from topic to topic. Mind you, I am going to be old fashioned and say I prefer the old manual, simply because you can read it in the bath.

PS - Does it Work?

I always take the words 'PostScript compatible' with a pinch of salt when it comes to the Atari market, but wonders of wonders, O-Line's EPS files actually load into Illustrator on the Mac! Quark has a few problems with the colours (or so I am told) but I think this is a Mac problem. It's also capable of dumping standard PS files, but I haven't had an opportunity to test these yet.

One irritating point is that PostScript files can't be directly reimported into the program. DMC suggest that the file should be saved from Illustrator as a GEM file and Dataformed through Calamus SL to a CVG - hmmm, well the next time I've got a few grand to spare I'll certainly think about doing that! Mind you, now the 'powers that be' have finally

✦ Outline Art 3 ✦

Improvements at a Glance

- ✓ Anything that could be extracted from Outline Art 1 in mono is now possible in colour. Dynamic greyscales become graduated fills, tints become colours and so on.
- ✓ Filter dialogue allows image processing-style effects to be applied to selected objects in a design.
- ✓ PostScript output facilities (to disk only).
- ✓ Semi-intelligent, programmable undo.
- ✓ Context-sensitive help system with hypertext links.
- ✓ Improved compatibility with the Falcon (although the Jan 93 version doesn't work properly in 256-colour modes - contact JCA about the current release).
- ✓ Better kerning editor and a buffer to allow larger amounts of text to be entered in one go.

seen the light, perhaps we'll see an EPS import module for Calamus SL.

A new feature brought about by the addition of colour is the picture 'filter'. The easiest way to describe its role in life is to compare it to image processing - whole drawings or just highlighted sections can be lightened and darkened from the click of a button. There's even a recolour option which allows you to colourize greyscale CVGs. All of the effects can be viewed within the filter dialogue box itself and discarded if things don't work out - and believe me they don't for the first few tries!

Use Your Loaf

The calculator is the ace up O-Line's sleeve. Whereas most packages are inherently limited to

a set range of effects, the calculator means that O-Line 3 is as powerful as you want it to be. A preset range of effects are built-in for a kick off, including sphere, cone, italic and plenty more besides, but more can be added with a sufficiently large dollop of mathematical knowledge. Neither the manual nor the on-line help go into much detail about writing your own formulae though, so don't get your hopes too high.

By combining some 'extended clipboard' features with the calculator, you can come up with some very special effects. For example you can make fifteen copies of an object, rotating each through five degrees and increasing the colour intensity by 5% as you do so. It really is mind-boggling stuff and with a little bit of experience it's easy to produce

complex text shadows and some fascinating abstracts.

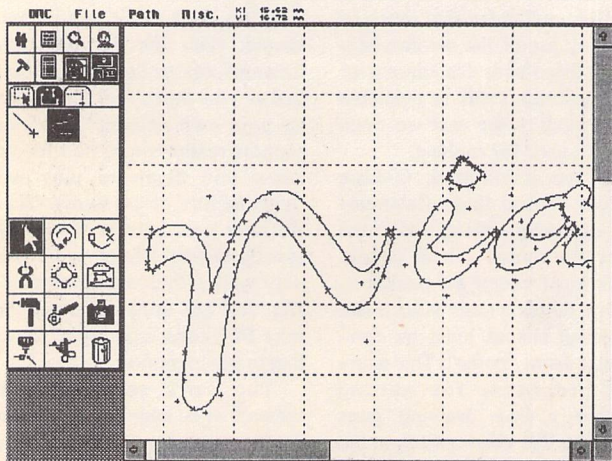
If everything goes horribly wrong, the undo facility is on hand to rescue your masterpiece. It's of the programmable variety and can be prompted to store the state of the art (if you'll excuse the pun) at any time. With 'automatic' toggled on, it will attempt to update itself with a degree of intelligence.

There's no doubt about it, O-Line 3 is still tricky to use, but that won't stop die-hard fans finding themselves in seventh heaven. For at least two weeks, every design you put together has to contain at least graduated colour fill and the nice thing is there is no real speed penalty to pay for the extra power. It runs perfectly well on the ST in mono and extremely nicely on the TT and Falcon in 16 colours. Things can become just a tad pedestrian with a lot of fills on screen, but in that case you can inject a bit of speed by switching to draft mode.

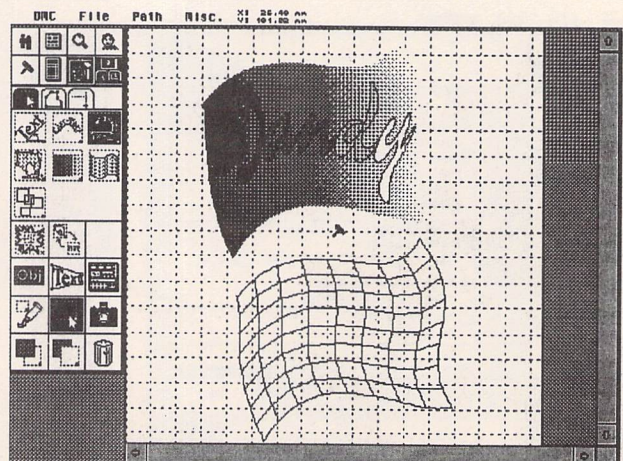
Third Time Lucky?

So is it third time lucky for DMC? Well from the point of view of the world's number one O-Line fan - yes it is. Version three is improved over the original in almost every way and the unchanged interface means you can be up and running in seconds. It's also fully compatible with the Falcon, unlike its forebear (although you can fix that problem by installing WINX 2.2 incidentally).

Having said that, most of the changes are centred around colour so if you work primarily in mono it's worth thinking hard about whether PostScript output and the other minor tweaks are



Text manipulation is O-Line's main strength. You can bend, twist or distort any Calamus font to your heart's content, and now in glorious colour!



Any object can be 'projected' onto a pseudo-3D grid, although when it comes to editing, DA's Vector wins hands down.

worth the amount of wonga being demanded in the UK. It's even harder to see where the new user fit into the picture with DA's Vector available at a little over half the price!

The bottom line is that Outline Art 3 is an astonishing package, just like its predecessor, but it's beginning to look like time and other packages have begun to pass it by. I guess DMC themselves sum it up best by retaining the words 'Experimental Outline Processor' in the info dialogue - surely O-Line should have decided its destiny by now?

Summary

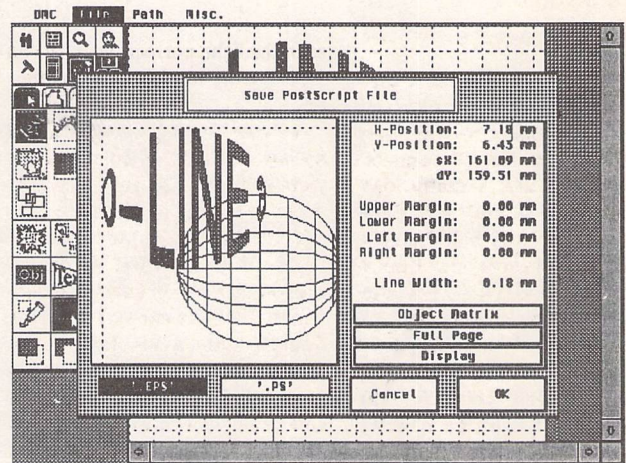
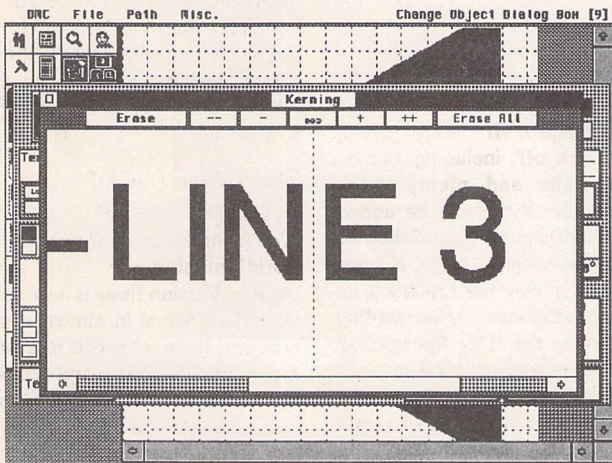
Points For:

- ✓ Flexible type manipulation
- ✓ Genuine PostScript compatibility
- ✓ 24-bit colour
- ✓ Good on-line help system
- ✓ on-line help system

Points Against:

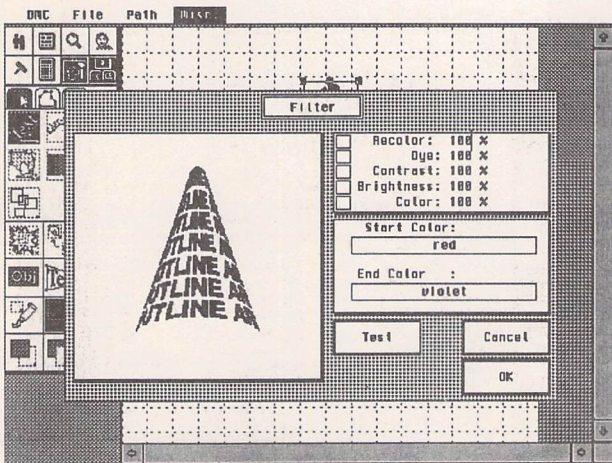
- ✗ Price
- ✗ Lack of proper drawing tools
- ✗ Complexity

Product:..... Outline Art 3
 Version:..... 6th January 1993
 Publisher:..... DMC
 Distributor:..... JCA Europe Ltd.
 30a School Road
 Tilehurst
 Reading
 Berks. RG3 5AN
 Telephone:..... 0734-452416
 Fax:..... 0734-451239
 Price:..... £245
 Upgrades:..... £105 from Outline Art Version 1
 Manifest:..... 146-page spiral bound manual and 1 double-sided disk.
 System:..... Atari ST, TT or Falcon with at least 2MB of memory and a high resolution monitor.

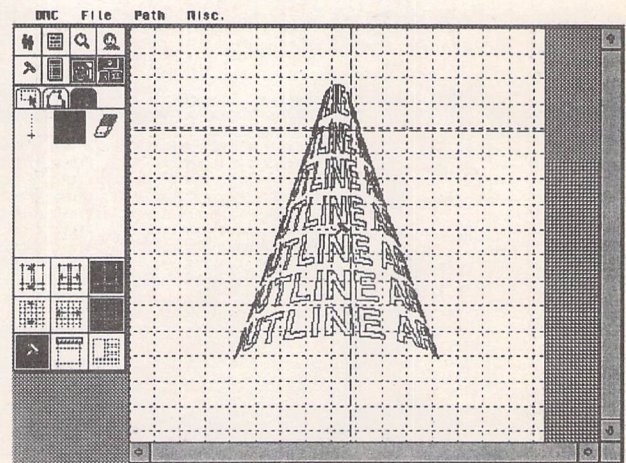


The kerning facilities are much improved and a built-in text editor makes it possible to deal with larger amounts of text.

Hold the front page! - Outline Art 3 proves that it is possible for Atari software to write compatible PostScript.



The 'filter' allows image processing effects to be applied to vector drawings. With practice it can be used to convert mono CVG files to colour.



The guidelines panel is a new addition and fits in nicely with the SL style interface.

Breakthru

Review by Ian King

First there was Sequencer One, then came Sequencer One Plus, now Breakthru is the latest development in sequencer software from Software Technology (formerly Gajits Music Software). And, as I write these notes, Software Technology's Christmas Newsletter drops through the letterbox announcing Breakthru 2 - more of which later.

I started using Sequencer One after it appeared as a cover disk with ST Format. This is pretty basic but I was looking around for another sequencer because of dissatisfaction with The Digital Muse's Prodigy. Now, Prodigy is a very good sequencer, and very fast too, but I was getting frustrated with the dongle interfering with other programs, even though it is meant to be invisible; also TDM are very difficult to get hold of and I felt that support from them was dropping away. Anyway, having used Sequencer One for a while, I saw the Plus version advertised in these pages and decided to buy. I was surprised and delighted to see in the manual that Gajits allow re-registration of second-hand purchases, which I did with indecent haste. Eventually Gajits made me an offer on Breakthru that I

couldn't refuse and I duly upgraded to their top-of-the-range sequencer.

Features

So, what do you get for your money over SO Plus? Probably the feature which has had the greatest impact on sales is its ability to output samples via Replay 16, the 16-bit sampler from Microdeal. SO and SO Plus had 8-bit sample playback capability but Breakthru was the first MIDI sequencer to support Replay 16, and as far as I know, is still the only one to do so. It also supports the 8-bit options and DMA output.

The other extra features are a score edit screen, drum edit screen, double the number of tracks (now 64) and various improvements to existing SO Plus screens.

Menus and Screens

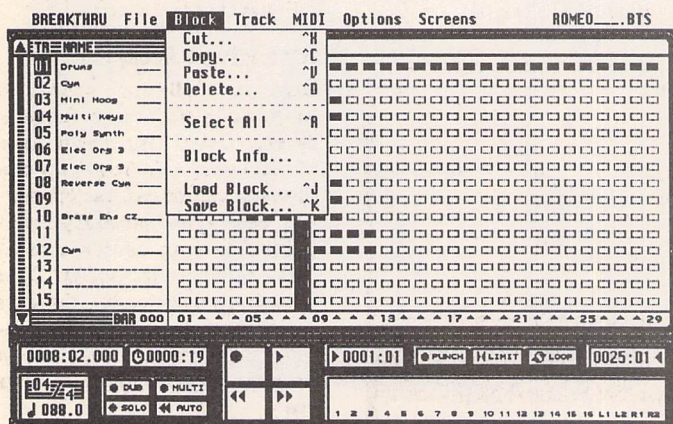
Breakthru is a GEM program with standard drop-down menus. It is, perhaps inevitably, rather slow on screen redraws, especially compared with Prodigy, which is lightning fast. I was rather irritated to discover that it doesn't like working alongside Harlekin in medium resolution; half the menu bar disappears and the screen saver once activated permanently blacks out the screen. This problem disappeared when I invested in a mono monitor, although the screen saver still must be switched off.

The main program screen is Track List. There are three areas to this: the actual track list displays track number, MIDI channel, name, volume, pan, bank and program number; to the right of the screen is the Marker List which

allows the user to assign song positions and 16 characters of text to a cue button, which when selected makes the song jump to that point. It is definitely worth making the effort to fill in the marker list as it offers a descriptive means of moving around your song. The third area is the Tape Deck, which is present on every screen. As well as the usual tape deck controls, this area contains the song position, tempo and time signature. A disappointment here is that the time signature only allows crotchet or quaver beats, and so signatures such as 4/2 or 3/2 are not possible. Up to 16 beats are allowed to a bar. A nice feature of tempo is that it can be set to the rate at which the mouse is clicked. There is also a separate Tempo Map screen where the tempo within a song can be altered as many times as desired. This can be very effective and does give a human feel to the music. The program has a resolution of 192 ppqn which, whilst not the highest resolution around, is still higher than many and is quite sufficient to allow your playing to be accurately recorded.

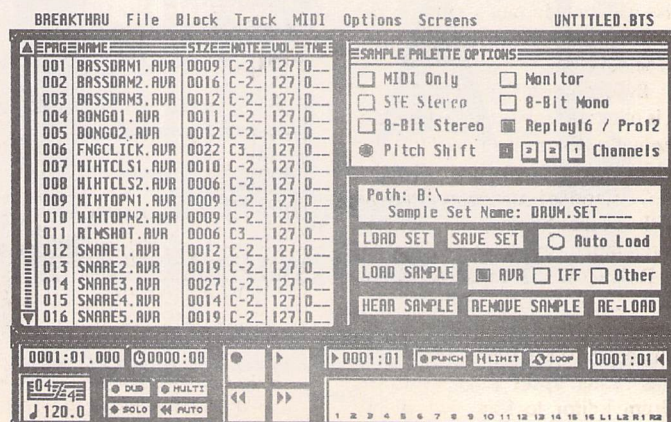
Editing

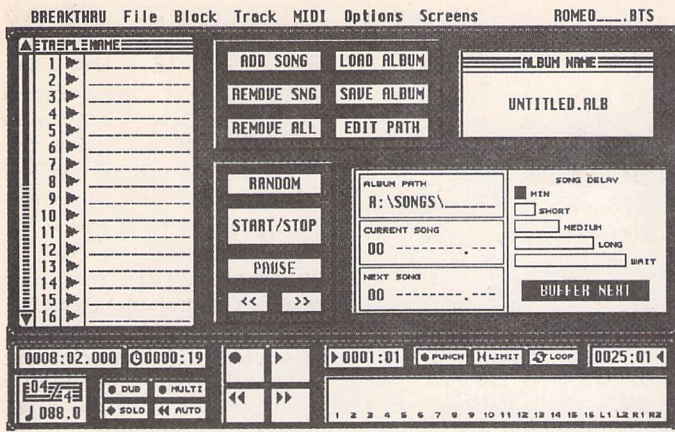
Every facet of a sequence can be edited. The Step Editor is a pleasure to use with its diamond drag feature, which was also present in SO Plus. Clicking on a note reveals four diamond shapes, each of which controls a different aspect of the note - velocity, length, pitch, and position. In addition, clicking on a square below the note reveals a mini-menu which allows further editing options, as well as the ability to change the note to a control event, for example to change the instrument for that track in the middle of a sequence. There is a



▷ The Sample Palette Screen showing the first sixteen samples in 'Drum.Set'.

◁ The Song Arranger Screen showing the Block operations menu.





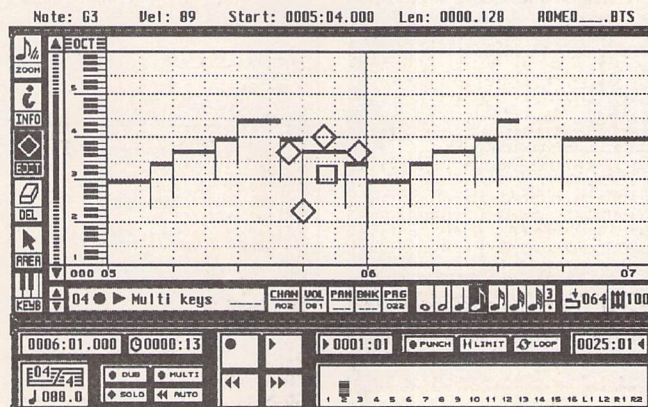
▷ The Score Edit Screen allows detailed editing. Version 1.2 is shown; version 2 is considerably more sophisticated.

keyboard step entry mode; a key-board replaces the tape deck part of the screen and everything else is disabled whilst in this part of the program. Notes can be entered by clicking on the keyboard on screen or playing notes on a MIDI keyboard.

The Score Editor displays your song in conventional music notation. Both diamond drag and the keyboard step entry mode can be used in this mode. The screen update is slow on my standard STFM; it cannot display the music in real time when a sequence is played. It is not really what I think of as a score; basically what you get is a single track displayed on a bass and treble clef. (But see "Version 2"). As there is no print facility, neither are there any symbols that can be placed on the screen. Only clefs, time signature, key signature, and split point can be changed (as well as the notes themselves, of course!). To be fair, Gajits do not claim this to be anything else and the functions are clearly explained in the manual. However, Gajits have announced that there will be a print-out module available in February 1994, price to be announced. It is to be hoped that this will include much more in the way of on-screen "ornaments" to select from.

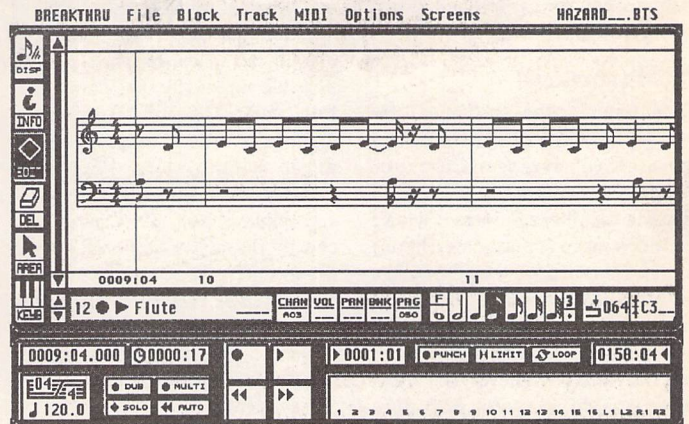
Before using the Drum Editor, it is necessary to set up a drum kit. Actually there is a default kit which is configured to a General MIDI standard and is compatible with most Roland instruments. Even though my main keyboard is a Roland D5, I constructed my own kit to include several sampled drum sounds. Having saved this as the new DEFAULT.KIT, I was rather upset when using the Drum Editor to find that all my

sampled drum sounds had apparently disappeared! The reason for this is that only one sample can be assigned to a program number, and each program must have a different track. The Drum Editor displays whatever drums it finds on the track number displayed, matched to the correct channel. So, if your drums sound on MIDI channel 10, and if on the Track List Screen you have MIDI channel 10 on track 1, setting the Drum Editor to track 1 will display MIDI drum names but not sampled drums. These will be on individual tracks, each set to sample output. I found that the manual did not explain this very well. The upshot of all this is that if you have sampled drum sounds you will not be able to see them all together on one drum map, which is not very convenient. Apart from this, the drum editor is fairly conventional. It also uses the diamond drag system for editing. Warning: a drum kit with sampled drum sounds can be quite large. I used the drum sounds from the Replay 16 Drumbeat disk as the basis of my sampled drum kit; 21



△ Step Edit Screen - 'diamond drag' makes edit operations very easy. Numerical editing can also be achieved using the 'Info' box.

◁ The Jukebox Screen (empty). A time delay can be set between each song to be played.



percussion sounds took 323Kb. It is worth noting at this point that Breakthru requires 1Mb to run, but if you make heavy use of samples then the more RAM the better. I have 2.5Mb which is sometimes barely adequate but one learns to work within the limits of one's system. A hard drive would be very useful (I haven't got one).

The Sample Palette

As previously mentioned, there are several output modes within Breakthru; as I have Replay 16, I have set this as the default when the program loads. However, this can be the source of much confusion. I also load a sample set at boot up to match the sample names in the default drum kit, then a "blank" song set up with my most commonly used MIDI voices and the sample names, again to match the sample set and the default drum kit names. I could not understand why a dialog box proclaimed "could not find samples", and then proceeded to wipe all trace of them from memory! The reason, as I was

glad to find out, was that I had saved the "blank" song to MIDI only in the sample palette option display. This was because I had merely adapted a file I used in SO Plus. The lesson here is to select your output mode and stick to it for all save and load operations.

Samples can be pitch-shifted (so they can be played as different notes) or not (so that drum sounds can be played regardless of note value); tuned to your MIDI keyboard; and adjusted in volume. Almost any type is catered for, although the AVR type is recommended. Up to four samples can be played simultaneously, although the higher the number of samples the lower the quality. The best quality output is obtained by using 16-bit samples one at a time, output via Replay 16. This is not as restrictive as it sounds as up to 128 samples can be loaded at once, memory permitting. Care needs to be taken with samples as they can have a relatively long delay time and will be cut short when the next sample sounds. A good compromise is to allow two samples to sound at once.

Arranging a song

Back to traditional sequencer functions - the Song Arranger Screen allows easy manipulation of blocks via a clipboard, i.e. bars of music can be cut, pasted, merged, deleted and generally manipulated to your heart's content. The resulting arrangement flows completely seamlessly - there are no glitches whatsoever. The contents of the clipboard can also be saved and loaded into a different song.

The Juke Box

Using this screen, it is possible to compile an album of songs which

can be played in any order, rather like a CD player. To do this, all the songs must be in the same folder and therefore on the same disk. Albums can be named and saved with an .ALB extension.

MIDI functions

It is beyond the scope of this review to cover all the MIDI features. I have never seen Cubase or Notator in action, but I would assume that these programs would be much more sophisticated in this area (at least, judging by Ofir Gal's articles). These are however heavyweight programs and make an unfair comparison. Breakthru has as many features as most users would find useful. Soft thru, Set filters, Remap controllers, Mode messages, and System Exclusive are all included. To be able to back up the data on my keyboard, which has been heavily customised, was a real bonus. Sysex information can be loaded with your song automatically so that different songs can have different instrument set-ups.

Version 2

I have not, at the time of writing, upgraded to Breakthru 2, so I will

merely summarise the new features from Software Technology's Christmas Newsletter: Score Enhancements - mainly multi-track editing and display; additional Block Operations, including an insert mode (this was possible manually on version 1 but very fiddly); Humanize Options - several ways to make music sound more "human"; Continuous Controller Graphs - e.g. volume, pan, pitch bend etc. can be displayed and edited as a graph; MIDI Generator - a slider which allows real time MIDI data to be added to a track; Miscellaneous - file utilities, track swap, backward compatibility down to Sequencer One.

Breakthru Plus 2

This is identical except that the package includes a hardware interface which plugs into the modem port to give a separate MIDI out socket. This means you can output to 32 MIDI channels.

Summary

Points for:

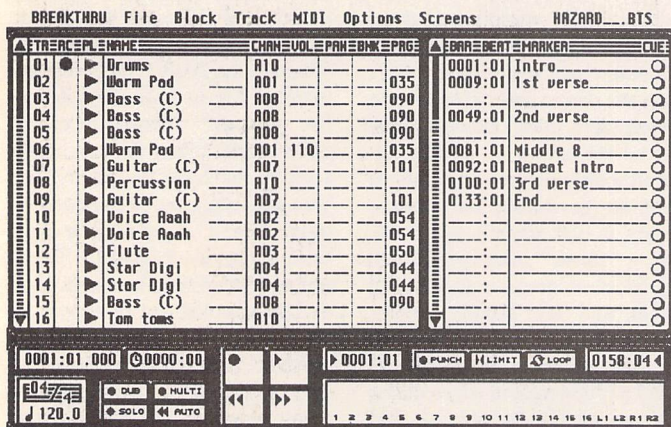
- ✓ Sample playback facility, especially Replay 16
- ✓ Diamond Drag editing
- ✓ Score, step, and drum editing
- ✓ High recording resolution
- ✓ Cue buttons
- ✓ System Exclusive
- ✓ Customer support - helpline available

Points against:

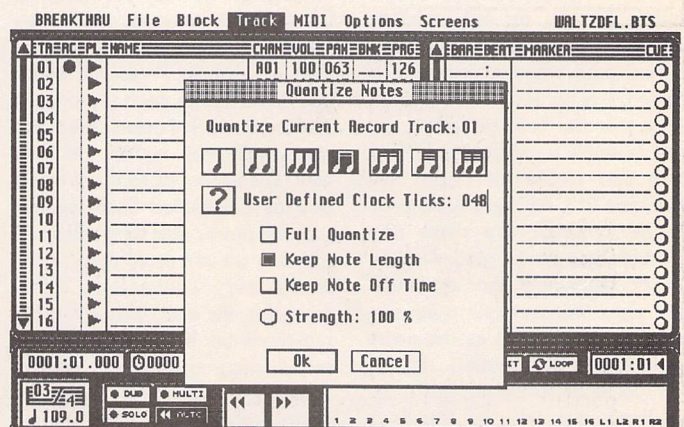
- ✗ Slow screen redraws
- ✗ Not much else at this price

Conclusion

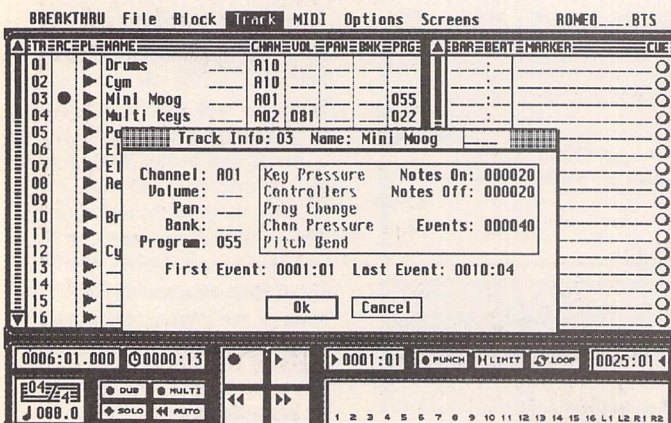
This is a fine sequencer. Most of the niggles I could have made about Breakthru appear to have been rectified in version 2, although not having upgraded yet I have yet to see how the new features have been implemented. I assume that Breakthru 2 is now the only version available, rather than an option. This being the case, there has been a price increase over the old version which I have shown in the information box. Alternatives: Prodigy (£135); Cubeat (£199); Session Partner (£149). If you specifically want to mix MIDI and 16-bit sample playback there is no competition.



△ The Track Screen. Clicking on a cue button will send the song to the bar/beat shown against the marker.



△ The Track Screen - quantize options. Most of these sub-menus can be applied to the whole track or just a part.



△ The Track Screen again with another sub-menu showing track details.

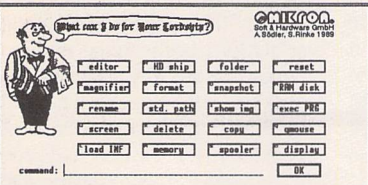
Product:.....Breakthru/Breakthru Plus
 Version:.....1.2
 Supplier:.....Software Technology Ltd.
 40 Princess Street
 Manchester
 M1 6DE
 Tel:.....061-236 2515
 Price:.....£149.95 (Breakthru 2)
 £179.95 (Breakthru Plus 2)
 Manifest:.....124-page manual in A5 ring binder; 2 d/s disks; extra MIDI out socket ("Plus" only)
 Add-on:.....Replay 16, also available from above address.
 Price:.....£99.95
 System:.....Any ST/STE/TT with 1MB RAM, colour or mono



Mortimer

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- Display: displays time and date.
- Keyboard macros: you can assign any text(s), sentences and function keys to keys or key combinations. For instance, [Alternate]-[S] might produce "Dear Sir,"
- Virus guard: Mortimer will protect your disks from boot sector viruses, and will detect link viruses when they try and spread to your files.
- Mortimer is memory resident and available at all times from within all programs. When installed, Mortimer reserves just 64K of RAM - all Mortimer functions are linked to a sophisticated memory manager.
- Mortimer version 1 is compatible with all TOS versions up to 1.62. The MegaSTe, TT and Falcon version - Mortimer DeLuxe - will be available December.
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Price: £14.95

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Comes with printer drivers for 9-pin and 24-pin dot-matrix, Atari SLM, HP LaserJet, and DeskJet 500C/550C (colour).

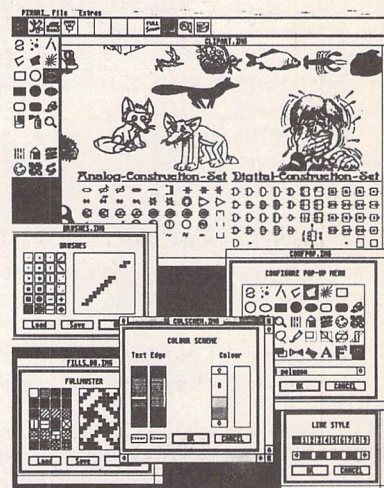
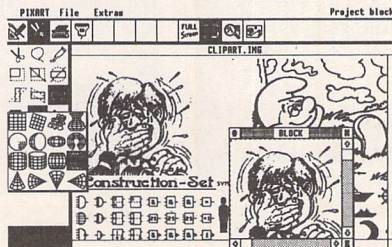
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Using

GFA Basic

Tim Finch

Welcome to GFA Basic Part 5. This month we continue to look at the program that was listed in Part 4. We only covered half of it and we will continue to look at it this month. Keen observers will notice that in part 3 I said we would look at ASCII last month and we didn't! Oops, sorry! I will do it before the series ends.

We just got up to the **WEND** line in program 4.1 and so we will continue from there. We move on to the **PRINT** statements underneath. Incidentally, we leave the **WHILE...WEND** loop once 'splitpoint' is equal to 0. This is achieved when all the names have been put into `eachname$()` and `name$` is reduced to nothing by the **RIGHT\$** line. The following **INSTR** will fail in looking for a space, as `'name$'` is now nothing at all and so `splitpoint` becomes zero.

The **PRINT** lines first display how many names have been entered; the 'counter' variable, having incremented by 1 each time the **WHILE...WEND** loop went round, is the number of different names entered.

The next **PRINT** lines print "Number" on the left, "Name Entered" 20 spaces in from the left and "alternative, if any" 45 spaces in from the left. The **TAB** command simply moves the printing into the numbered column specified. The trick here are the semicolons (;). These tell GFA to print all of these three pieces of information on the same line. The last **PRINT** statement uses the **STRING\$** command. This command takes two pieces of information. The string of characters in the "" marks is repeated, in this case, 70 times.

In the **FOR...NEXT** loop we are going to go over each name now stored in the `eachname$()` array and print it on the screen. We also get GFA to run a check on each name to see if we have an alternative that can be displayed. The approach taken to do this is a standard 'structured' programming technique called 'procedures'.

A procedure is like a smaller self-contained program. It does a particular function (usually hinted

at by its 'name'). You can call this procedure from anywhere else in the program. By doing so, GFA goes to the **PROCEDURE** line for that procedure, executes (runs) all the commands up to the **RETURN** line and then comes back to the first line **AFTER** where the procedure was called from. In this way you can treat a procedure like a new command in GFA - it does something and then you carry on from where you are. You can call **PROCEDURES** from within **PROCEDURES** as well, which is handy.

In our **FOR...NEXT** loop we set up to go round from 1 to the value in 'counter' (the number of names entered). Each time round, as usual, the 'lupe' variable increases. The next line takes the name stored in `eachname$(1)` (the first time round) and puts it into a string variable called 'thisname\$'. The next line is the call to the procedure entitled 'checkname'. I always mis-spell variable and procedure names. It's a safety procedure to stop GFA getting confused with commands such as **NAME** or **LOOP** etc.

The call to the procedure is done by typing the name of the procedure followed by information or variables all separated by commas inside brackets. If we now scrutinise the **PROCEDURE** line further down we see the name again and two variables inside brackets. The first is a numeric variable called 'entry', the second a string variable called 'name\$'. We call this having 'two parameters'. So, in our calling line in the **FOR** loop we pass two pieces of information in. Thus the current value of 'lupe' is passed into the variable 'entry' as we go into the procedure and the current contents of 'thisname\$' is passed into 'name\$'. We will examine the procedure in a tick, but for the moment we will treat the 'checkname' call as a new command which does a particular job. What it does is print (1) the value of 'lupe' on the screen, (2) the name stored in 'thisname\$' and (3) any alternative spelling for the name in `thisname$` that it knows about.

We then encounter the **NEXT** statement which increases 'lupe'.

We go round like this over all the names stored in the `eachname$()` array. When this is done we move to the first line after the **END IF** line. (The **IF...ELSE...END IF** structure was to check if a name was entered at the beginning of the program. If not, then the lines between **ELSE** and **END IF** are executed (run) and these print up the appropriate message to say no name was entered. If so, none of the lines between the **IF** and **ELSE** line would have been run at all.)

GFA now prints up a message to ask if we want to do this again. The **INPUT** statement puts up a question mark and a cursor for the user to tap in the answer followed by **Return**. If either 'N' or 'n' (treated as different letters by GFA) was entered then the 'finish!' variable is set to **TRUE**. **TRUE** has the value -1 and so `finish! = -1` now. We then reach the **LOOP** line. This forces GFA to go back to the **DO WHILE** line at the top to see if 'finish!' is equal to **FALSE** (ie 0). It doesn't and so GFA goes to the next line after the **LOOP** command and this is **EXIT** which stops the program. If the user hadn't typed 'N' or 'n' then 'finish!' would still equal **FALSE** and so we would do the whole thing again.

OK, so on to the procedure. As we come into the procedure the two variables 'entry' and 'name\$' contain a number and a name respectively. Firstly the procedure prints the value in 'entry' at the left of the screen and the contents of 'name\$' 20 spaces in from the left (directly under the 'Name Entered' text printed earlier in the program). On the next line **UPPER\$** command takes the contents of the supplied string variable and looks at every character in it. If any character is a lower case letter (a small letter, 'a-z') then it is changed to the upper case version (A-Z). If any character is not a lower case letter then it is left alone. The result is put into a string variable called 'uppername\$'. Thus if you had "Peter" stored in 'name\$' then 'uppername\$' would be "PETER".

The **RESTORE**, **READ** and **DATA** commands in this procedure are all related. The **DATA** commands contain a list of names. It is irrelevant that they are split over 19 lines. They could all be on one line, separated by commas. Imagine these names written down a blackboard. The teacher stands by with his pointing stick. The line 'dayalist:' is like an indicator to GFA saying where the data starts - it doesn't do anything else. The **RESTORE dayalist** command is

like telling the teacher to point to the first name on his blackboard with his stick. He duly points to the name JOHN and waits.

The **READ** line has two string variables on it. Thus the first two names from the **DATA** are put respectively into 'firstname\$' and 'secondname\$' - and this would be the names 'JOHN' and 'JONATHAN'. As this is done, the teacher moves the pointer down past both of these names, so now pointing to JIM and again he waits. The next time GFA comes across a **READ** statement, JIM will be the first name to be read in. This "teacher's stick" principle is called the **DATA POINTER**, and moves on each time an item is **READ** in.

We then get another **WHILE...WEND** loop. So long as 'firstname\$' is not "Z" (it isn't yet, it is 'JOHN') we continue inside the loop. GFA now checks if the name in `uppername$` is the same as either of the two names read from the data list. If the user had typed in "John" then 'uppername\$' (which is "JOHN") is the same as 'firstname\$' and so GFA prints the contents of `secondname$` ("JONATHAN") 45 spaces across from the left. If the user had typed in 'Jonathan' then 'uppername\$' would match 'secondname\$' and so 'firstname\$' is printed up on the screen as the alternative. GFA is doing this with a slightly new structure the **IF...ELSE IF...ENDIF** structure. It's quite clear, if the first comparison (on the **IF** line) fails then the second comparison (on the **ELSE IF** line) is tested. However, if the first comparison succeeds, the second comparison is never even tested.

After the **ENDIF** line we read the next two names in, which are JIM and JAMES. The **WEND** forces GFA back to the **WHILE** line to see if we have read in a "Z". If not, we go round again, but if we have then we jump to the first line after the **WEND**. If we do exit the **WHILE...WEND** loop, we encounter a **PRINT** statement. After this we reach **RETURN** (the **DATA** lines are skipped), so GFA jumps back to the **FOR** loop above in the program.

You may like to remove the **PRINT** line just above the **DATA** lines to see what effect this has. Also, try taking out the semicolons at the **END** of some of the **PRINT** lines to see what this does.

Well, that's it for episode five. Next month is the last episode and we will tie up a few things such as ASCII (ahh yes) and associated commands. Happy Coding!



FALCON

APPLICATIONS

Compo News

Compo Software unveiled their real-time True Colour digitiser at the Atari Shows in December. It is called Matrix Screen Eye and was developed in Germany. The hardware digitises at several different resolutions up to a maximum of 720x576 and is capable of digitising in real time at up to 25 frames per second, dependent on resolution. It will be available in the U.K. during the first quarter of 1994 with an expected price tag of under £300.

Also shown at the Atari Shows was Studio Presentation by Eurosoft, the people behind Studio Photo. Studio Presentation is a visual presentation aid and can be very loosely described as the Imagic Graphic System brought up to date for the Falcon. It takes a series of TIFF images and applies various user defined effects such as swipes and cross fades, to produce impressive visual presentations. No details of price were available but you can expect to see Studio Presentation during the first half of this year.

The product which we were all waiting to see and hear is Compo's Voice Mail system, which is in effect a very versatile telephone answering machine running from your Falcon (see Falcon Applications in issue 35 for more details). Unfortunately, it was not shown in December as expected, but has been previewed in Germany, where it was used as part of an advertising campaign. It proved very popular, attracting over 100 callers per day. I have no details yet as to the name of the product or its expected release date or price. More news as we get it.

BSS Debug

BSS Debug is a symbolic 68030 debugger for the Falcon. It was designed by Black Scorpion Software and is both fast and simple to use, with keyboard shortcuts available for almost every function. It uses its own custom designed WIMP interface, allowing windows to be resized and moved to suit. BSS Debug handles both the standard Atari format labels and HiSoft's extended debug labels, allowing a length of up to 22 characters.

The debugger is completely transparent to other programs and even lets you debug a program which is running in another resolution. Any memory loca-

tion between 0 and \$ffffff can be inspected and you can look at hardware registers without crashing your Falcon. It is even possible to debug programs running in virtual memory and watches can be placed on the contents of any labelled memory location and these can be displayed as ASCII, bytes, words or long words. Changes to the CPU registers made by the last executing part of the program are highlighted in the CPU Register Window.

BSS Debug supports any language which makes accesses to the GEMDOS system traps and allows programs being debugged to interact with it. BSS Debug will be available soon from Titan Designs Ltd, 6 Witherford Way, Selly Oak, Birmingham B29 4AX; Tel/Fax: 021 414 1630.

Chroma Unveiled

ChromaStudio 24 went on show to the public for the first time at the Atari Shows at Birmingham and Manchester last December. The product is nearing completion and will be released in the first quarter of this year. In the unlikely event that you have not heard of Chroma, it is a very fast integrated graphic product which handles art, animation, image processing, digitising and morphing. It has been in development for about eighteen months and is the creation of Black Scorpion Software's Douglas Little, the author of PhotoChromosome on the ST.

Chroma runs in 256 colour or True Colour modes and employs the use of a

Falcon News

virtual screen to accommodate oversize pictures. Pictures larger than the screen can be M.I.P. mapped to give a much more professional result if shrinking is required. Chroma's animation control can best be described as based on Cyber Paint but brought right up to date. The program has a vast array of drawing tools which include four types of Bézier curves with three levels of accuracy for each kind, four types of boxes including gradient filled and quad grad, sixteen different brushes to which one of three effects can be applied, four cut and paste buffers, circles and triangles which can be outlined, solid or gradient filled, 2D block rotate, 3D block distort and much more.

You can paste blocks above or below and load animations above or below other animations. The morphing studio allows near photographic pictures to be smoothly transformed into each other with the minimum of effort on the part of the user. The specialised tools allow such effects as watercolour, oil paint and chalk to be used in true colour pictures to give them that realistic touch. The digitising studio fully supports Titan Designs' forthcoming Exposé digitiser, allowing you to grab frames from a video source into Chroma in real time. Extensive palette control includes support for RGB, CMY and HSB standards as well as the ability to re-order the colours in the palette (in order of luminance, chrominance or red, green or blue value) without affecting the image on screen. A block can be remapped to screen colours and vice versa and any colour can be replaced with any other. Full support is included for 24-bit palettes, including a 256 greyscale mode for image processing.

File support is extensive with over twenty picture and animation types (including GIF, TIFF, TGA, FLI, FLC etc) being supported for loading and about half a dozen of the more useful formats for saving. Chroma's built in on-line help makes the program easy to use for novice and experienced user alike. ChromaStudio 24 was demonstrated at the Atari Shows by Titan Designs who are to handle distribution in the Midlands area. Floppyshop are responsible for worldwide distribution of Chroma and are in the process of setting up distribution channels throughout Europe and North America. ChromaStudio 24 is expected towards the end of the first quarter of this year and will retail at £149.

FOG Sweeps Across Europe

The Falcon Owners Group have recently set up two European branches. Both groups offer free access to the Falcon section of their bulletin boards, four issues of the club magazine and cover disk and discount on Falcon PD and Shareware in return for your annual subscription. Membership to FOG Denmark costs 200 kroner. Contact Henrik Weide, Tambosundvej 19, 1.th, DK-9220 Aalborg O, Denmark; Tel: (+45) 98 15 92 64; BBS (+45) 98 16 26 91. Membership to FOG Sweden costs 200 SEK. Contact Magnus Thylander, Finnholmsvagen 2, 141 42 Huddinge, Sweden; Tel: (+46) 08 775 78 64; BBS (+46) 45 19 10 02. FOG UK continues to be run by Richard Davey but they have moved to PO Box 353, Stafford ST17 9US.

Seeing the Whole Picture



Jon Ellis has been looking into the new video capabilities of the Falcon. Some square-eyed musings follow...

Introduction

While the rest of the world has been moving on to ever higher resolution displays with more and more colours, Atari owners have had to put up with a fairly limited set of options. With the introduction of the Falcon, this gap has begun to narrow. However, to get the most out of the Falcon's video system requires some effort, and some care in choosing the monitor. This article attempts to provide some guidance, particularly for those thinking of investing in a Falcon.

One of the more confusing aspects of the Falcon's video system is the sheer variety of different display units that can be attached. Four types are recognised: ST monochrome and colour monitors, PC-compatible VGA monitors, and televisions.

Long-time Atari owners without exposure to the PC universe may be confused by the use of such terms as VGA and SVGA. These refer to various IBM-compatible graphics standards which have evolved over the years. Table 1 details the hardware characteristics of these standards. VGA stands for Video Graphics Adaptor, and defines the basic graphics capability that you would expect to find on a PC. Most machines are now supplied with Super VGA displays, and the trend is towards the proposed eXtended VGA standard.

Resolutions in theory

The Falcon makes a distinct break from the ST world of fixed resolutions. Instead it offers a mix-and-match approach to screen displays. The number of colours

available can be varied almost independently from the dimensions of the screen.

Display Dimensions

The width of the screen is controlled by the choice between 40 and 80 column modes, yielding 320 and 640 pixels per line respectively. The number of lines on the screen is determined largely by the type of monitor used - see Table 2.

The basic screen dimensions can also be modified by one or more effects. Interlacing allows a doubling of the number of lines displayed on a screen. This is done by displaying all the odd numbered screen lines on one frame, and all the even numbered lines on the next. The big drawback of interlacing is that the screen refresh rate is effectively halved, causing flickering. Depending on the monitor and user, the flicker may be unacceptable.

VGA monitors support an effect called line-doubling. This

Table 1: PC Graphics Standards

Standard	Minimum Specification
VGA	640 x 480 in 256 colours
SVGA	800 x 600 in 256 colours
XVGA	1024 x 768 in 256 colours

	Number of Lines	Modifications		
		OVERSCAN	INTERLACE	LINE DOUBLING
ST Monochrome	400	x	x	x
ST Colour	200	✓	400	x
VGA-type	480	x ^①	x	240
Television	200	✓	400	x

Table 2

The number of screen lines obtainable using various display types. When available, overscanning increases the number of lines by a factor of 1.2, interlacing by 2, and line doubling halves the number of lines. The effects are cumulative, so an interlaced overscanned display has 2.4 times the basic number of lines.

Notes: 1. Overscan is not possible on VGA-type monitors. Atari attempted to get the monitor to display a portion of the overscanned screen (the bottom right corner). This does not seem to work well in practice though.

displays each row of pixels twice on adjacent screen lines. It therefore halves the number of vertical pixels. Line-doubling is not terribly useful.

Overscan can be used to increase the vertical and horizontal resolutions by a factor of 1.2 each. It can be used in combination with interlacing to give a display of 768 x 576 on a standard ST colour monitor.

Colours

The Falcon supports five different colour options; four using a palette system like the ST, and the

unique true colour mode. In the palette modes, a palette of 2, 4, 16 or 256 colours can be chosen from the 262,144 colours obtainable from the Falcon hardware. In the true colour mode, 65536 colours are available simultaneously. There is only one interaction between the size of the screen and the colour depth: the combination of 2 colours and a 40 column screen is illegal.

Compatibility

The Falcon also has three ST-compatible graphics modes that should ease any difficulties posed

by badly-written software. In these modes the screen dimensions are the same as the normal ST high, medium and low resolutions, and the choice of colours is reduced to those obtainable on an STE (ie 4 or 16 from a range of 4096).

Resolutions in Practice

Not all of the Falcon's possible video modes are available on all devices. Indeed, it seems that to display all modes, an advanced multisync monitor is needed. Needless to say, these are not particularly cheap. The Falcon is able to sense what type of display unit is attached, and uses this information to initialise the video system appropriately at boot time. The Desktop 'Set video...' menu option also makes use of this knowledge to restrict the choice of modes to those that work on the display in use. Table 3 summarises the important limitations imposed by various display types.

The Desktop allows independent setting of the number of colours and screen width, as well as enhancements such as interlace and line-doubling. ST-compatibility modes are chosen from a separate dialogue box (Figure 1). The overscan mode is not available from the Desktop, but can be activated by engineering the NEWDESK.INF file (see the article by Phil Hodgkins (p29, STA35)).

The Hardware

Of course, with so many different display devices, it will probably come as no surprise to learn that there are several special cables required to connect the equipment together. The Falcon has two video ports. The simpler of these is an RCA phono socket that allows connection to the aerial input of a colour television.

The Falcon video port proper is brought out to a 19-way D-plug on the back panel (Box 1). Since there are no monitors that are designed to connect directly into this, short conversion cables are used to match the Falcon port to the connector on the end of the monitor input lead. There are two types of conversion cable in common use. One is terminated in a 13-way DIN socket for ST-compatible displays. This is compatible with both monochrome (SM124/5) and colour (SC1224/Philips 8833/8852) monitors. The other ends in a high-density 15-way D-socket for use with standard PC-compatible VGA or Multisync monitors.

	ST modes			Falcon modes									
	HIGH	MED	LOW	① 2		4		16		256		TC	
				40 col	80 col	40 col	80 col	40 col	80 col	40 col	80 col	40 col	80 col
ST Monochrome	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
ST Colour	✓ ²	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓
VGA-type	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗
Television	✓ ²	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 3

The compatibility of the various screen modes with the display type.

Notes: 1 Illegal screen display

2 Only possible using interlacing

Falcon Video Port

The video port is similar to a standard SuperVGA port, but also includes the additional connections required to support Falcon-specific features such as genlocking, and to provide compatibility with ST monitors. The signals are provided by a 19-way male D connector:

Some more information on the Falcon-specific signals is given below. Authoritative data on the electrical characteristics is provided in the Atari DocSupport VI manual.

Pin 4 Monochrome/Overlay

The function of this line depends on the video mode in use. In ST high resolution compatibility mode, it provides the video output for the ST monochrome monitor.

In True Colour mode, the logical level of the line reflects the status of the overlay bit of each pixel. This is used in genlock applications to indicate that the pixel is transparent, so revealing the external image (line low). A high level indicates that the Falcon video is active.

Pin 14 Vertical sync

This line provides standard VGA vertical sync output. When a genlock is being used, this line operates as an active low inhibit input for the internal vertical sync generator.

Pin 15 External clock input

This line is only used in genlock applications to supply a clock synchronised to the external video signal.

Pin 16 Even/Odd

When the Falcon is operating in an interlaced video mode, this line is low when an even frame is being written, and high when the output is for an odd frame.

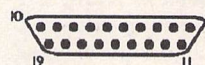
Pins 18 and 19 Monitor select

These two input pins form a two bit selector for the type of display unit in use. On the ST, a single line signalled the difference between colour and monochrome monitors. Since the Falcon can use four different types of display, an extra line is required. The codes assigned are:

Pin 18	Pin 19	Display Unit
M1	M0	
0	0	ST-compatible monochrome monitor
0	1	ST-compatible colour monitor
1	0	VGA monitor
1	1	Television

These inputs are held high when unconnected, so when nothing is plugged into the video port, the Falcon automatically switches into its television output mode.

Falcon Video Port



- 1 Red
- 2 Green
- 3 Blue
- 4 Monochrome/Overlay
- 5 Ground
- 6 Red Ground
- 7 Green Ground
- 8 Blue Ground
- 9 Audio Out
- 10 Ground
- 11 Ground
- 12 Composite Video
- 13 Horizontal Sync
- 14 Vertical Sync
- 15 External Clock In
- 16 Even/Odd Interlace Line
- 17 +12V
- 18 M1
- 19 M0

Table 4: GEM-drawing Benchmark Results

Relative Performance

Colour Depth	Without NVDI	With NVDI
2	3.5	8.4
16	1.9	5.1
True Colour	1.0	3.1

Figures represent the performance of a Falcon performing a battery of display tests, normalised to the result for the True Colour mode without NVDI v2.50. Benchmark program: GEM_Test v2.0. Test system: 4Mb Falcon running a 800 x 592 virtual screen (BlowUp030 Hard 2) of the indicated colour depth, caches on, 16MHz.

Since these video adaptor cables retail for anything up to £15 excluding VAT, it's a good idea to make sure that your Falcon comes with the particular cable that you will need. Of course, it is perfectly possible to save money by making your own adaptor video adaptor - see Box 2 for details.

Screen Expanders

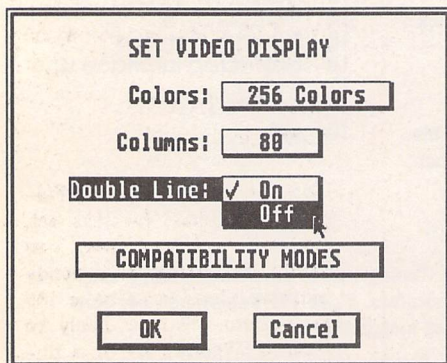
One of the first third-party additions to appear for the Falcon was the screen expander. It seems that the video hardware of the machine is capable of much more than the TOS software asks of it. By simply reconfiguring the VIDEL (the Falcon's video chip) in software, it is possible to produce some increased resolutions. There are several programs, commercial and public domain, that do precisely this (see Box 3), though they can provide only a limited range of options.

By adding extra hardware to the Falcon, much greater flexibility can be obtained. Two such

upgrades are BlowUp030 and ScreenBlaster (see Box 4 for more details). The highest resolution display obtainable in this way depends largely on the capabilities of the monitor, and how much flicker the user is prepared to accept. Resolutions of at least 1024 x 768 can be achieved. However, these extra pixels are all crammed into the same physical space, so each must be smaller. At such high resolutions, the 6 x 6 system font used for icon labels can become quite difficult to read.

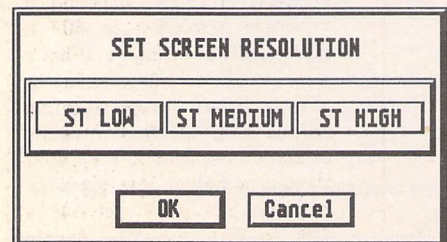
The Price of Progress

As seems inevitable, there is a penalty to be paid for the Falcon's extra display options - there's no power without the price here! Even without enhancement, a 256-colour VGA standard 640 x 480 mode requires over 300K of memory for the screen, which is almost ten times the RAM needed for a standard ST resolution. Boost the display to 1024 x 768 x 256 using extra hardware, and over a fifth of a standard 4 mega-



< Figure 1

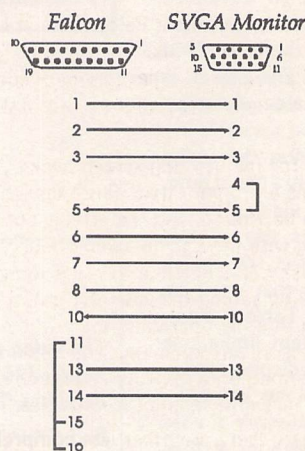
The Desktop uses two dialogue boxes to allow setting of the video mode. The main dialogue box (A) controls the Falcon-specific video modes via a series of pop-up menus, one of the new features of the Falcon AES. ST-compatible video modes are set from a subsidiary dialogue box (B).



DIY Video Adaptors

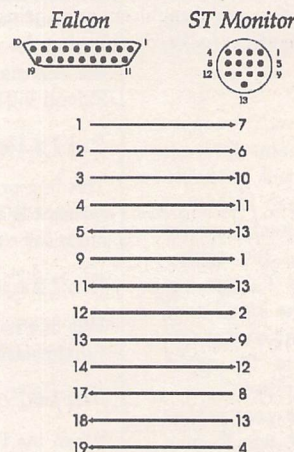
Making up the Falcon video adaptors is straightforward for anyone who knows how to wield a soldering iron, and the savings can be impressive. All of the parts should be available from the usual component suppliers, perhaps with the exception of the 19-way D socket, which seems to be a bit of a rarity. Prices and part numbers for Maplin Electronics are given below. The information is correct at the time of writing, but should be checked before an order is placed. The pin-outs are given for the view looking into the mating surface of the connector.

Falcon-VGA Adaptor



Parts required: 19-way D socket	JZ18U	£0.86
D hood 19-way	JZ24B	£0.75
15-way HD D socket	JW78K	£1.60
D hood 9-way	FP27E	£0.56
12-core screened 7/0.2mm	XS20W	£1.10/metre

Falcon-ST Monitor Adaptor



Parts required: 19-way D socket	JZ18U	£0.86
D hood 19-way	JZ24B	£0.75
13-pin DIN line socket	JW97F	£1.60
12-core screened 7/0.2mm	XS20W	£1.10/metre

Falcon-Television Cable

Wiring: Phono plug to standard coaxial plug via screened coaxial cable. Wiring is centre to centre; screen to screen.

Parts required: The composition of this cable is included for completeness, though it is probably not worth making it up from the components. Maplin sell a pre-made cable that does the job nicely.

HQ Coax plug	FD85G	£0.65
Phono plug screened	HH01B	£0.38
White low-loss coax	XR87U	£0.32/metre
Phono/Coax video lead	FV90X	£1.20

Software Screen Expanders

Detailed documentation on the programming of the Falcon's VIDEL chip is not easy to find. Despite this, there are several programs that manipulate the hardware in order to expand the display. All of the programs increase the screen dimensions at the cost of increasing screen flicker. Certainly for modest screen expansions, the slight decrease in screen stability can be perfectly acceptable.

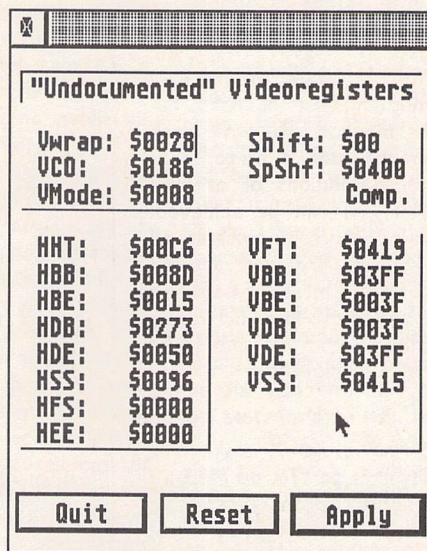
One commercial software screen expander is available: BlowUp030 Soft. This is a cut-down version of the software supplied with the full BlowUp030 system (see below). Additionally, demo versions of the BlowUp030 package and of the ScreenBlaster can be obtained from public domain libraries, though with text in German. These show how the full versions work, but provide only a restricted range of resolutions. The ScreenBlaster demo can produce a useful 864 x 512 screen in 16 colours on an SVGA monitor.

In the public domain, the excellent FalconScreen by Markus Gutschke offers a variety of new display sizes in conjunction with an SVGA-type monitor. The archive includes full source code for the program, as well as a couple of other screen utilities. The screen expander works extremely well, with few compatibility problems. Resolutions up to 800 x 608 can be produced with reasonable refresh rates.

What's even better for the budding screen hacker, the archive also contains a program that allows the VIDEL register contents to be altered, and the effects observed in real time. Playing with the Falcon's video registers can be somewhat risky. It is possible to cause damage to a monitor simply by setting the video hardware to produce a signal outside the operating range of the monitor. For this reason, any such experimentation is probably best performed on a multisync monitor which has a wide range of acceptable input frequencies.

Besides FalconScreen, there are other less comprehensive utilities and demos that use the Falcon video hardware. SUPER_78 is a small program that boosts the screen refresh rate to 78 Hz for a more stable display; 1600DESK claims to produce a 1600 x 600 display mode!

Given the possibility of monitor damage, it is important to read the documentation supplied with these programs carefully, checking any special requirements against the monitor technical specification before running the software.



byte machine's memory is gone.

Since the screen space is taken from the same pool as application memory, running a large screen may limit the performance of memory-hungry applications. The new 1MB base-model Falcon is likely to be particularly prone to this. It is not easy to get around this problem by adding more memory, as the currently possible memory configurations for a Falcon are rather limited (1M, 4M and 14M only). It would have been useful for Atari to provide a stepping-stone between 4M and 14M (say 8M) to give an easier upgrade path.

A less obvious drawback applies particularly to the higher colour displays, especially the much-vaunted True Colour option. In these modes, the sheer number of memory manipulations required to draw and animate images results in a noticeable slowing of the machine. To demonstrate how marked this effect can be, Table 4 gives the results of some display benchmarks conducted under different screen resolutions. The table shows that screen handling in the monochrome (2-colour) mode can be more than three times faster than in True Colour mode.

A screen accelerator such as NVDI can ameliorate the speed problem somewhat, though it will always exist as a consequence of the hardware design. Indeed, even on the 2- and 4-colour modes, NVDI makes the screen response noticeably crisper. On the higher colour modes, it becomes vital. Without assistance, merely activating a drop-down menu on a True Colour display is a painful experience!

The View from the Soapbox

Most welcome though the Falcon's new video facilities are, for the most part they can hardly be considered groundbreaking. Consider, a basic 386 PC system will most likely be running Windows 3.1 on a SuperVGA monitor, offering a minimum resolution of 800 x 600 in 256 colours. What's more, it will do this straight out of the box, without any tinkering around with different monitors or screen expanders. Plug your shiny new Falcon into the same monitor, and you'll get 640 x 480 in 256 colours. Hardly

Further Information

Falcon Hardware

Further details on the Falcon video hardware and capabilities can be found in the excellent DocSupport VI: Atari Falcon030 Developer Documentation from Atari. In addition to providing the basis for much of the technical information in this article, it also includes material on the DSP and sound systems. See STA 34 for a review of the whole package.

Product:.....DocSupport VI: Falcon030 Developer Documentation
 Supplier:.....Atari Corp UK Ltd., Railway Terrace, Slough, Berkshire SL2 5BZ
 Price:.....£49.99 (including VAT and UK delivery)

Screen Expanders

Product:.....FalconScreen, Super_78, 1600Desk
 Supplier:.....Public Domain Libraries
 Product:.....BlowUp030
 Supplier:.....System Solutions, Windsor Business Centre, Vansittart Road, Windsor SL4 1SE
 Tel:.....(0753) 832212
 Price:.....Software version: £15.00; Hardware option 1: £49.95; Hardware option 2: £69.95

Product:.....Screenblaster
 Supplier:.....Compo Software, 7 Vinegar Hill, Alconbury Weston, Huntingdon PE17 5JA
 Tel:.....(0480) 891171
 Price:.....£79.95

Screen accelerators

Product:.....NVDI v2.5
 Supplier:.....System Solutions, Windsor Business Centre, Vansittart Road, Windsor SL4 1SE
 Tel:.....(0753) 832212
 Price:.....£49.95

The small print:

The information in this article is believed to be correct at the time of writing. You should verify details, particularly prices, before making any decision. As usual, hardware add-ons and cables are built by you at your own risk. Many thanks to Compo for the loan of a Screenblaster during the preparation of this article.

pushing the monitor to the limit, is it?

Returning to our PC, when its new owner switches it on for the first time, it will boot up into the Windows Program Manager, complete with multicoloured icons and window gadgets. Take a Falcon out of the box, connect it to a monitor, and what do you get? A screen that only an Atari buff can tell apart from an ST low-res desktop - it's black, and white, and green, and 320 x 200. What an inspired sales pitch!

There's quite a serious point here for the marketing men. The screen display of a machine is important, because that's what the punter looks at. What makes it worse is that Atari used to have a lead in the visual impact department. When I bought my first ST in early 1986, one of the things that sold it to me was the pin-sharp, rock-solid monochrome display. At the time, there was nothing to match it. Times have changed, and Atari have fallen behind.

The Bottom Line

Without enhancement by third-party products, the Falcon's new screen modes bring the most advanced ST family member more or less up to date with the bottom end of the PC market. Admittedly, the Falcon does have some nice extras such as built-in genlock compatibility and the True Colour modes, but for these are not relevant for many applications.

However, with the aid of BlowUp030 or Screenblaster to unlock the capabilities of the monitor, and NVDI to make screen handling tolerably fast, the Falcon can go much further. It just makes one wonder why Atari never included these things in the first place!

To truly exploit the new video hardware of the Falcon, a 4 megabyte machine with a VGA monitor and a screen expander seems like a minimal system. NVDI v2.5 is an absolute essential to preserve one's sanity, particularly in the higher colour modes. A SuperVGA monitor or, best of all, a multisync, are desirable add-ons if the budget permits.

Hardware Screen Expanders

At present there are two hardware screen expanders available for the Falcon: BlowUp030 and Screenblaster. Both originate from Germany, the home of some of the best ST products, but are supported by well-respected distributors in the UK.

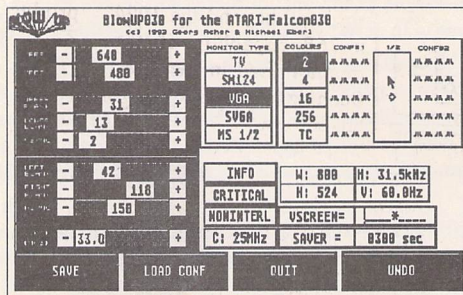
The basic layout of the hardware is the same in both: a small plastic box with a 19-way D connector at either end that sits between the Falcon video port and the monitor cable. A flying lead runs from the side of the box to a 15-way high-density D connector that plugs into one of the enhanced joystick ports on the Falcon's left. Owing to Atari's outstanding design skills, a standard connector cannot be used in these ports as it fouls the Falcon's case; so both manufacturers have had to use a jerry-rigged substitute. In appearance Screenblaster seems rather homemade. Blobs of glue on grey plastic and untidy ribbon cable are no match for the silvered box and smart label of BlowUp030!

Both products operate in a similar fashion. In addition to the hardware, there is a driver program that must be run from the AUTO folder. The screen driver is instructed to produce the required display by use of a separate configuration program. The software replaces the system video mode setting routines, rendering the bulk of the Desktop 'Set video' dialogue redundant. The dialogue is only used to select the number of colours required; the AUTO folder program dictates the screen dimensions for each colour mode.

BlowUp030

BlowUp030 comes in three flavours: Soft, Hard 1 and Hard 2. The Soft package is software only and therefore limited in its capabilities, but cheap. Hard 1 and Hard 2 are two versions of the hardware, suitable for use with different types of monitor. The more flexible of these, Hard 2, was used for this review.

The Hard 2 package consists of the electronics, a disk, a registration card and five sheets of A4 that pass as the documentation. Installation of the hardware and software is easy following the instructions. The core of the package is the configuration program BLOWCONF. This presents the user with a bewildering



display of sliders and buttons with which to customise their video environment.

The major problem is the inadequate documentation. Several of the sliders are completely ignored by the program manual, and no guidance is given on how to manipulate the settings to obtain the best display. There is a list of preset values that can be selected from, but the range of resolutions is less comprehensive than Screenblaster. The business of rolling your own screen has to be conducted by a little trial and error. Fortunately, the documentation does give good advice on how to avoid damaging the monitor: read it carefully. To get the best from BlowUp030 it is essential to know the capabilities of the monitor thoroughly. When used with a multisync monitor, BlowUp030 allows the video to be configured in real time, which can be very useful.

The slider at the bottom-left of the dialogue box controls an important feature of BlowUp030 Hard 2. By supplying an external pixel clock to the monitor, controllable from this slider, extra flexibility can be gained. The Falcon can internally generate a choice of two clocks: 25MHz and 32 MHz. Hard 2 can use these, or its own variable clock which can be varied between limits of 33MHz and more than 51MHz. This can be used to create displays with high refresh rates, and therefore excellent stability.

Separate configurations can be made for each of the Falcon's five colour modes. These will automatically be activated when the appropriate setting is chosen from the Desktop 'Set video' dialogue. Clicking 'Save' results in a BlowUp030 screen driver program being written into the hard disk AUTO folder, ready for use.

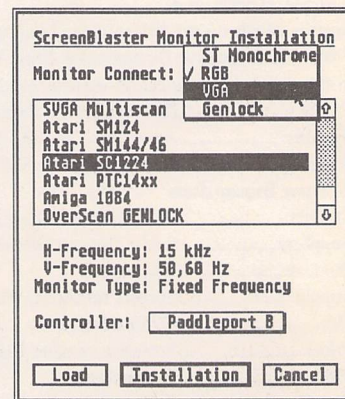
In addition to the resolution determination, the screen driver also supports the provision of a vir-

tual screen. In this mode, the physical screen is treated as a viewport onto a much larger work area, up to thousands of pixels in each direction if so desired. When the mouse approaches the edge of the physical screen, it is scrolled across the work area using the hardware fine scrolling of the Falcon. Very impressive, and occasionally useful too. The

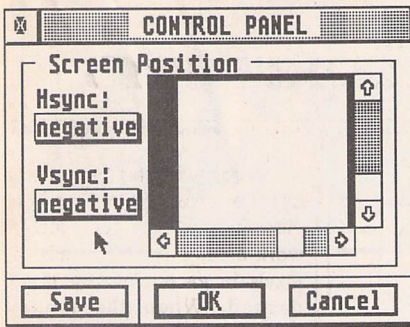
software also includes a screen saver option.

Screenblaster

The Screenblaster package consists of a 16-page printed manual, registration card, the hardware and a disk. Installation is simply a matter of plugging the hardware in and copying the software onto the boot partition of the hard drive. Configuration is straightforward too. A GEM program allows selection of the type of display to be used. Specific monitors, such as the Atari SM124 monochrome display, are listed along with generic types, like 48 kHz SVGA. For monitors not individually named in the list, the monitor handbook must be used to carefully choose a compatible setting. A perfect match may not be obtainable, in which case a conservative selection should be made to avoid the possibility of damaging the monitor.



After installation a reboot is required to activate the software. When the software loads, a screen is presented listing the screen dimensions possible for the monitor, given the prevailing colour depth. Choosing a resolution is simply a matter of selecting an option from the list and pressing RETURN. If no keypress is received within a few seconds, the software continues booting with a default setting. Once running, the



screen setting can be changed by using the Desktop 'Set video' dialogue to provoke a video reset. This results in the list of available resolutions being presented again.

A nice touch is the provision of a CPX that enables the vertical and horizontal position of the screen image to be moved without recourse to adjustment of the monitor's controls. The software also provides a virtual screen facility, just like BlowUp030.

Performance

In terms of the actual screen resolutions obtainable, there seemed to be little difference between the units. Both were able to

produce perfect displays in the region of 800 x 600 on an SVGA monitor with little effort. Less practical options were also available, pushing the screen size well beyond the 1024 x 768 capability of the monitor used in the tests. Such sizes are probably of limited use on a standard-sized monitor as the pixels are so tiny. In the True

Colour mode, both products were able to significantly enhance the rather miserly 320 x 200 screen normally obtainable on a VGA monitor.

Some of the BlowUp030 resolutions produced odd white bands at the edges of the screen, despite being within the acceptable range of frequencies for the monitor. All of the Screenblaster options tried gave clean sharp displays.

Software compatibility of both packages is excellent. Only packages known to be slightly rocky in screen handling (eg Tempus 2) caused any problems at all. Software written to be resolution-independent, as all applications should be, gave no trouble. Both systems are compatible with

NVDI, a vital requirement when running a large screen, and Multi-TOS.

Summary

In conclusion, neither of these products is perfect. I suspect BlowUp030 Hard 2 is the more flexible of the two units, with its variable oscillator and fine control over the hardware. Set against this though, the Screenblaster software is so much easier to use.

Both systems have inadequate documentation. Surely if a piece of software is capable of causing damage to a monitor, there should be an overwhelming case for a comprehensive manual. As it is, both packages include dire warnings about not exceeding the capabilities of the monitor, but limited explanation of the background information (though BlowUp030 is better in this respect). It would have been much more satisfying to have a briefing on how monitors work, how they interact with the Falcon, what the extra hardware was doing and so on.

Despite this, once you have adapted to the extra working space that these add-ons provide,

it is almost impossible to return to the claustrophobic confines of the standard 640 x 480 VGA screen. Every Falcon user should have either BlowUp030 or Screenblaster, but which one?

Both products do the job perfectly well, providing huge varieties of new screen dimensions to explore, and are highly compatible with other software. On the surface, there is little between the competing products. BlowUp030 Hard 2 has the potential to emerge as a clear winner though. It is £10 cheaper than Screenblaster, and might have a technical advantage in the hardware too. If the BlowUp030 team were to thoroughly rework the software for ease of use and to really exploit any hardware edge, the choice would be a lot easier.

At the moment though, the choice probably comes down to whether you are happy to spend a few hours fine-tuning BlowUp030 to squeeze the most out of the monitor, or whether you want to get Screenblaster set up with the minimum of fuss and then crack on with using your enhanced display. Your money, your choice.

Imagecopy 2

Image utility for Atari ST/TT/Falcon computers

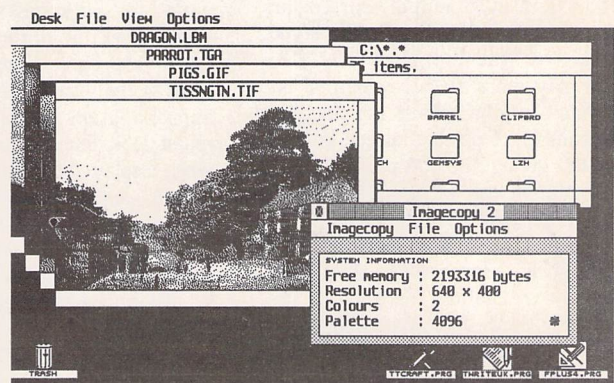
Copy images from screen in any ST/TT/Falcon video mode. Images can be copied by pressing Alt-Help, and a flexible rubber-banding system allows images to be selected with a fine degree of accuracy.

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.

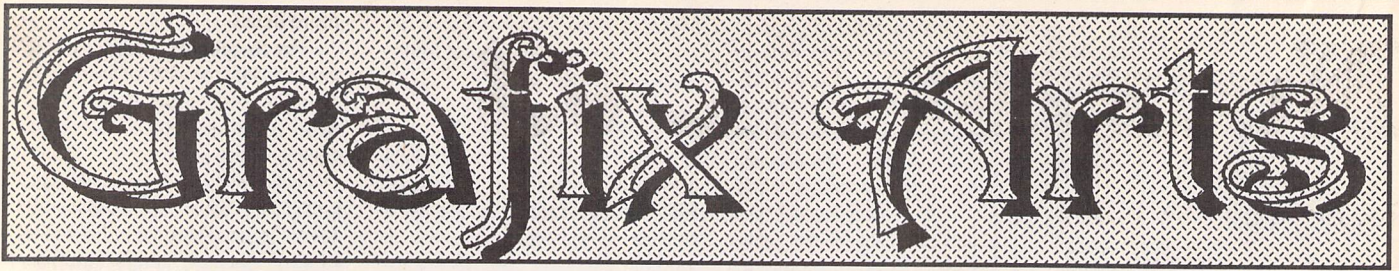
User-friendly GEM interface, including window menu bar, pop-up menus, colour sliders. Can be used as an accessory or stand-alone program.

Price - £19.95

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

FAST Club

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Paul Keller

TECHNIQUE – Resolution 2

We have looked at the resolution of the ST before, with most if not all of us having worked with low resolution graphics in some form or other. This month we are looking more closely at the medium and high resolutions available, what we can use them for and tips on using them in different situations.

Medium Resolution

In this ST mode a maximum of four colours at any one time can normally be displayed. Packages such as "Quantum Paint" and "Canvas" can display more at this resolution but are still limited to four colours per line. The maximum number of pixels that can be used is 640 by 200 giving 128,000 pixels in total. Medium resolution can be a bit restrictive for certain applications, such as multi-coloured paintings. The four colours on offer are not enough in comparison to the sixteen offered in low resolution for such a use. There is a way, however, of making seemingly more colours appear on the screen than normally possible within a basic colour palette art package. For this illusion the cross hatch pattern is used. This pattern can be found in most art packages within the fill pattern command. It is a dot screen of 50%, which means that half of the dots form the ink while the other half form the paper. As an example, if you used this pattern with a black colour ink over a white paper you would get a mid-grey colour as a result. Similarly, if you used a red ink over blue paper the resultant colour would look like a magenta. The effective use of the cross hatch pattern in medium resolution is much greater than that of low resolution owing to the greater resolution offered by medium. If we find that we need specific colours such as red, blue and green on a white paper we will have used up our four colours in this resolution. This is because the background counts as a colour, leaving only three inks available. Medium resolution is often used by those

people who have a word processor and only a colour monitor, for the better display it gives for such textual applications. After all, it doubles the characters per line, from forty found in low resolution to eighty in medium. This benefit can be carried across to DTP or bitmap graphics; the text found in such packages looks much smoother than that of low resolution programmes.

A group of people who would benefit most from the use of medium resolution are graphic designers. Having been a graphic designer myself for some seven years, using the ST for this very purpose, I can only give praise for packages such as "Degas Elite". Degas works in all three ST resolutions. We would use its medium resolution to design logos at the visual stage. This stage is only an approximation of what the finished idea might look like but is still very impressive when displayed on computer. For applications such as stationery no more than two colours are normally wanted, so the three ink colours available are more than enough for logo or visualization production.

There is a major drawback with medium resolution in that the vertical resolution is still very low, ie. 200 pixels wide, which is the same as low resolution. This can make some lines look very blocky and unprofessional. The solution is to apply the cross hatch to such lines; this breaks it up, making it look much finer than it really is.

High Resolution

This is the best resolution for DTP work and any black and white drawings. A resolution of 640 x 400 is used and this provides a good basis for all monochrome work. It can be used for various graphic formats, such as bitmap, vector and image. If a high resolution bitmapped picture was printed out it would be about 75dpi as this is about the screen image detail.

Many of the clip art pictures that are available for the ST are in image format or IMG for short. A package which is great for manipulating such pictures is "Touch up", generally used in conjunction with a scanner

but it can work just as well on its own. With picture formats such as image and vector graphics it must be remembered that if the picture is to be printed out its resolution will tend to be much greater than that of the screen view we see.

Take for example a scanned image at 400dpi. If we were to reduce this picture size by half on printing we could effectively double its resolution to 800dpi, but the drawback would be that we could only probably print it out at 300dpi (the limit of our printer device perhaps).

It is worth bearing this important point in mind when dealing with any scanned image. If an IMG picture is enlarged on printing its resolution is effectively reduced, while if it is reduced its resolution on printing is increased. Sometimes, therefore, a low scan rate such as 200dpi might only be needed if a picture is to be reduced, saving on valuable memory space.

A bitmap drawing will remain the same size as the screen area being worked on in monochrome. Dot screen patterns need to be used in place of colours - these dot patterns act as different grey scales. But some computer artists prefer to use the airbrush and different dithering techniques as opposed to the coarser dot fill screen patterns.

When it comes to professional work, high resolution computer graphics are often essential, especially in the DTP field of work. As with "Image" graphics the data of the picture is often greater than that of the screen.

Viewing any such picture on the monitor at its maximum resolution means that only a small part can be seen at any one time. Often therefore you will find yourself scrolling around the picture while viewing it in some kind of zoom mode.

Vector graphics are perhaps the way ahead of bitmap as they lose no detail when expanded or reduced. There are several such packages available for the ST; "Outline Art" as used with "Calamus" is one such package and now that we have "Calamus SL" a whole new door has opened up for colour DTP and high resolution colour drawing.

Notator SL v3

Reviewed by Tim Finch

Notator has had much mention in the ST and music press over the last six years. Since its original incarnation as Creator V1 back in about 1986 it has changed much resulting in the new look Notator Logic now available for Falcon and Mac as well as ST.

Notator SL V3.x, the version immediately prior to Logic, has been the stablemate for a few years, and it is this that I shall concentrate on in this article. SL (as I shall refer to it from here on) has dropped in price considerably recently, available for a street price of around £270 – against the RRP (that some of us paid) of £550 a few years back. This brings it into more people's budgets, especially if you are a musician looking also to buy an ST – 1040STEs are now available new for a street price of about £200. With a second-hand SM124, you can be up and going for about £550....

If the marketing hype of software sellers works, you'll be under the impression that you need Notator Logic and nothing else is any good. This is just not true. The best thing, in my opinion, EMAGIC did was release Logic – because this means SL has been reduced to half price – and so is an absolute bargain.

We know it's a best seller, it's complicated, brilliant, musical, professional, etc. But how on earth do you turn it ON? Anyone spending their first ten minutes in front of SL probably instantly joined the Society of People whose Hearts have Dropped into Their Boots! I shall, in this article, attempt to make some sense of SL's bewildering screen displays, by splitting it into a block diagram (Fig 1) and give an overview of each section. By the end you should have a good idea of this package and its abilities. It's just impracticable to expect to teach SL in a three-page article!

Once you've convinced SL that the dongle IS in the cartridge port (STs only – SL doesn't work on a Falcon) you are presented with the main screen. The confusion here is immediately noticeable. No fewer than five distinct

'sections' of Notator's features are all on one 640x400 screen.

Had this been only, say, three sections, SL would be easier to approach. The five sections are illustrated in Figs 2–6 and are the ARRANGE display, PATTERN display, TRACK PARAMETERS, TRANSPORT CONTROLS and what I call the DIALS at the top. The screen also contains two small but important buttons that are the gateway to over half of SL's other features – EDIT & RMG.

A good way to get into SL is to learn the keyboard short cuts. Most of them are single letters,

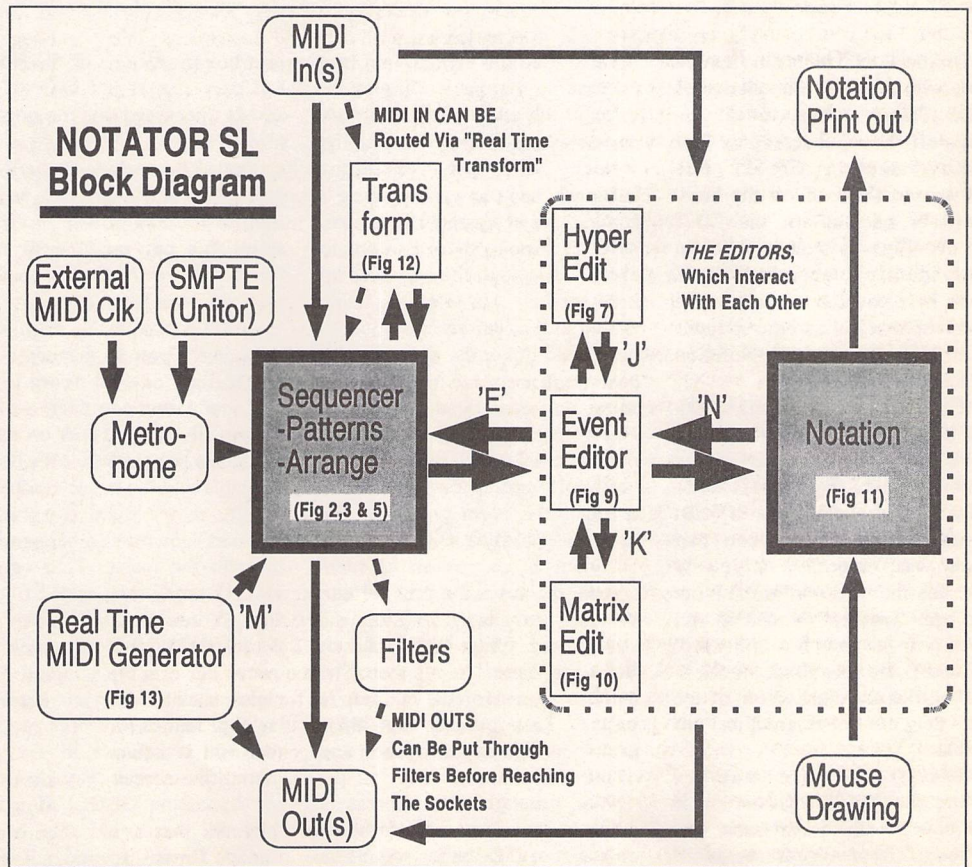
rather than the standard ALT-X or CONTROL-P combinations. This allows you to have one hand on the mouse and the other on the ST keyboard, and gives quick effective control of SL's parameters. Pressing the E key takes you into the Event editor (Fig 9). Pressing it again brings you back to the main screen.

Let's look at figure 1, the block diagram. The two large squares – the SEQUENCER and the NOTATION boxes really form the hub of SL. Both are quite different in the way you can put information into them and get it back. Let's look at each section in

more detail.

The Sequencer is really represented by the Pattern (fig 3), Arrange (Fig 2) and Track parameter (Fig 5) displays. It's like a tape machine – you play into it, it records faithfully, and then you can play back. Of course, the recording is not the audible sound of the keyboard but the MIDI information – a way of representing what was played and when, for how long and how hard. Then, the sequencer plays that information back to the keyboard just as though the player was doing it all over again. Up to 16 simultaneous recordings can be made in a pattern. There are 99 patterns which can be used to make one song.

The song is arranged (put together from various patterns) in the Arrange mode. Here you 'join together' patterns end to end (down the screen). Also you can have four simultaneous patterns playing together thus creating the ability to play a staggering 64 tracks (16 from each of the four possible patterns) simultaneously. Most of the actual recording, arranging and playback of songs can all be done from the main screen – utilising the transport controls (Fig 4) to move through the song you create.



Notator SL V3.x simplified block diagram. This shows the general relationships between SL's main features. The hub of activity is centred around the sequencer (Pattern & Arrange displays) and the Notation sections.

▽ The top row of the main screen display miscellaneous settings, such as current tempo, time position and free RAM for MIDI information (measured in MIDI Notes, not bytes).

438516	--	intern	100.0000	1/16	4/4	00 00.968
FREE	ARRANGE	SYNCDL	SYNC	TEMPO	FORMAT	SIGNATURE
						h min sec ms

ARRANGE		a	b	c	d	MUTE
1	Intro	1				1
2	ar	1				2
3						3
4						4
5	Bridge	3				5
6						6
7						7
8						8
9						9
10						10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19
20						20
21						21
22	Verse	2				22
23						23
24						24
25						25
26						26
27						27
28						28
29						29
30						30
31						31
32						32
33						33
34						34
35						35
36						36
37						37
38						38
39						39
40						40
41						41
42						42
43	Chorus	4				43
44						44
45						45
46						46
47						47
48						48
49						49
50						50
51						51

STATUS	Pattern: 1	CHANNEL
1	Bass	A 1
2		original A 2
3	Piano	A 3
4		original A 4
5	Strings	A 5
6	Top Strn	A 6
7	JazzGuit	A 7
8		original A 8
9	Snare	A 10
10	Hi Hat	A 10
11	Bass Drm	A 10
12	Rhythm	A 10
13		original A 10
14		original A 10
15		original A 10
16	Tempo	original A 10

TRACK: 9
CHANNEL A 10
QUANTIZE 768
GROOVE
TRANSPOSE
VELOCITY 10
COMPRESS 1:4
LOOP
DELAY 2
LOWEST
HIGHEST
GHOST OF

1 1 1 1
BAR / 4 16 768
1 1 1 1
LEFT LOCATOR
1 1 1 1
RIGHT LOCATOR
-- --
AUTODROP CYCLE
SPACE DROP UNDO
PUNCH RECORD
CC XX Enter
C D STOP
START CONT

△ The arrange mode. It's a bit like gluing bits of tape together. However, you can glue up to four bits of tape side by side, which makes SL a 64-track sequencer. This figure illustrates two tapes side by side.

△ The pattern display. This is where most things take place - the 16 tracks of each pattern (piece of tape), their contents, the MIDI channel to play on, etc., are all displayed here.

△ The Track parameters. Further details about the track within the pattern display (fig 3) which is highlighted (by the black bar) are displayed here. The MIDI transmit channel, quantise (time correction) and other data can all be altered here.

△ The standard play, stop and pause type controls. The top 'bar counter' indicates where you are in the song. The locators underneath allow you to loop sections of songs, and are used in certain editing functions.

Figures 2-6

On the whole, recording can be done with a limited knowledge of MIDI. This is not so once you move off this main screen to 'The Editors' section (Fig 1). The gateway to this is E on the keyboard or clicking on the EDIT button (Fig 8). You are taken firstly into the Event editor (fig 8). From here you can move into the other three editor screens: Hyper Edit, Matrix Edit and Notation Edit.

The Event editor details information on the currently selected track (black highlight bar) in the pattern display (Fig 3). It is basically a list of every piece of MIDI information received when that track was recording. It mainly contains the information 'A Note has been pressed' (Note On) and 'That note has now been released' (Note off). By default all the 'Note Off' entries are masked out of the list - they are not deleted, just not visible.

The four-figure number before the NOTE information is the time at which that note was pressed. This timing is measured in musical bars, beats, quarter beats and 768ths of a beat(!). The channel column is the MIDI chan-

nel that the note came IN on (not necessarily the one it will play on through the OUT port). The note and octave are listed next with the 'velocity' after that - this is the hardness the note was hit where 0 is no sound at all and 127 is very hard hit. Finally there is a length entry - how long the note was on until the key was released. Using the up and down arrows you can go up and down the event list for each track recorded in the current song. You can use the mouse to change the information, and put new 'events' in (each 'note on' or 'note off' etc is one event) by dragging the event type from the upper left part box (Fig 9).

When SL is not on its main screen, the keypad on the ST can be used to start and stop the sequencer playing - the '0' key is Start, the 'Enter' key is stop. The asterisk is record and full stop is pause. This means that SL's sequencer can be run when in any of the editor pages.

The notation editor (press N when in the event editor) works on a sort of DTP basis - you have this blank screen that starts with just one stave on it. You can drag notes and symbols from the mini

part box on the left or the hidden full part box at the base of the screen (accessed by moving the mouse to the very bottom of the screen). You can place the symbols anywhere and SL adjusts them to make music notation sense (it's not possible to have five beats' worth of notes in a 4/4 time signature for example).

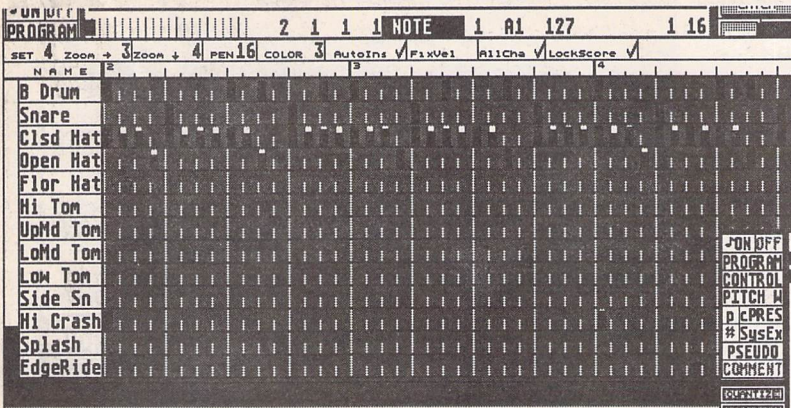
After a double click on each track in the pattern display (Fig 3) and turning on Full Score in the Edit menu, you can have a whole system of blank staves on which to place symbols. SL works on the principle that the music extends to infinity to the right. By pressing key pad) you move a bar at a time through the music. Text can be placed anywhere and SL uses GDOS fonts but not GDOS - Yip-pee! Any GDOS fonts can be loaded - but prepare yourself for a nightmare of scaling and correlating font names to screen ratios in the Fonts dialogue in the Edit menu (the price to pay I suppose for bypassing GDOS). (Incidentally SL won't be able to use Speedo fonts - I wonder if Logic will later on - it doesn't as of yet.)

Once mastered, however, the system is pretty simple, and very

effective - especially if the GDOS fonts you have are supplied in screen resolution and the printing resolution of your printer. SL is supplied with three font families for 24 pin and laser printers, and they work very well indeed. Luckily, SL is supplied with some sample files of Notation which set the fonts up for you - just erase the music (using New Pattern in File menu) and you have a 'font template' so to speak.

The beauty of SL is that any DTP-type changes you make to the stave(s) are immediately made in MIDI information in the associated track. Of course, some symbols do not have a MIDI meaning and so no changes are then made. Similarly, once you have recorded something in a track then that track's stave is automatically 'scored up' for you - giving SL's 'best guess' approximation of what you played into the sequencer.

Let's look now at the 'best of the rest' of SL's features. Hyper Edit (Press J in the event editor) should really be known as Drum edit. This page (Fig 7) can be set up to represent one drum sound per line. The black bars indicate



△ Fig 7: The Hyper Edit page. Although highly configurable (if you can understand it) the Hyper edit page should be called Drum Editor page. You can place each drum hit (the little black bars) exactly where you want in time, and adjust its velocity (hardness) - the height of the black bar. Superb!

each drum hit of that sound on the bar and beat gridding underneath. The height of the black bar indicates how loud that hit was. Each hit can be moved, deleted or have its velocity (loudness) adjusted with the mouse. New hits can be introduced by pasting in new events. As the sequencer plays, a 'flashing' light follows on the hit currently sounding, which can help to sort out mis-timings. Hyper edit is a very versatile page, highly configurable and probably the author's most used option within SL.

The Matrix Editor (Press K in the event editor) is like a 'piano roll' that scrolls upwards as the music plays (Fig 10). It displays its notes as black 'holes' - the length of the hole indicates the length of the note. The notes can be repositioned using the mouse. It is superb for editing piano type parts to easily spot and remove 'double notes' - when your finger accidentally hits two adjacent notes on the music keyboard instead of one.

The Realtime MIDI Generator (Fig 13 - select the RMG button from SL's main page) is an interesting feature. You can set it up to generate MIDI data as though it had come in through the MIDI In socket. You can pull the 'faders' up and down with the mouse as though they are controls on your synth. This generates different user configurable MIDI information that then flows out the MIDI Out socket so it can control some of your MIDI equipment - great for controlling a MIDI effect box which has microscopic buttons. Alternatively, if you start the sequencer recording, the data generated is recorded onto the

highlighted track, as though it had just come from the MIDI In socket.

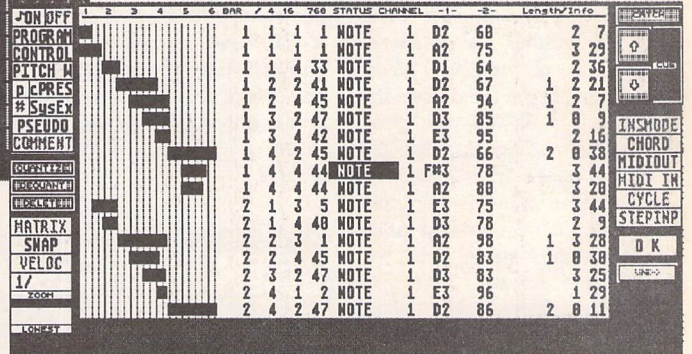
The Transform box (Fig 12 - accessed by Transform in the Functions menu) is a maze of features. I cannot hope to express a 10th of its possibilities here. It can change groups of one type of MIDI events (say a group of NOTE ON events) into Volume changes or Patch numbers of Tempo changes. The vast array of options gives power to do some very useful and/or quite catastrophic editing on your song. In conjunction with the Universal Maps function of SL, you can do some exceptionally hard transformations in no time at all. I'm still discovering, after three years, what I can do with this option. A nice feature of SL is the ability to send all MIDI data coming in the IN socket through a particular transform 'set' so that before the data even reaches the sequencer it has changed. The applications for this are things like turning pitch bend data into modulation wheel information (for people with synths without a modulation wheel control). A whole book could be written on Transform.

A final word is on UNITOR (you-night-tor). This is an optional extra box that plugs into the cartridge port and allows you to connect SL to a tape machine. Putting an audible code called SMPTE onto the tape machine allows SL to run in time with a tape machine and gives a fast, reliable link-up system in studio environments. I've used Unitor regularly over the last three years and found it to be exceptionally trustworthy, if not expensive!

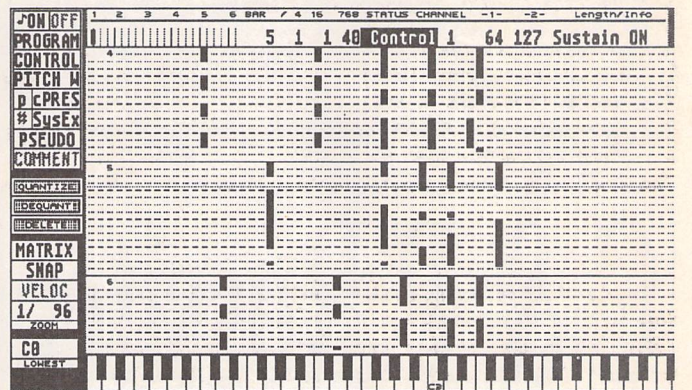
Phew! It is so hard to write a



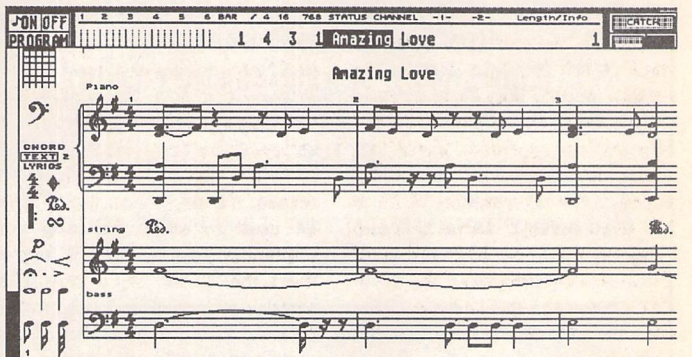
◁ Fig 8: These two inconspicuous buttons are actually the gateway to over half of SL's other features, such as Notation, RMG, Event editor and more.



△ Fig 9: The event editor. This displays each discrete piece of MIDI information SL has recorded. With the mouse you can alter ALL of it (!). The UNDO keyboard button comes in very handy here...



△ Fig 10: The Matrix editor is very much like a Pianola, which uses the punched rolls of paper to play the notes. You can move the black 'holes' around the screen to change mistakes. This mode is great for spotting and remove 'double hits' - when you inadvertently press two adjacent keys on the music keyboard in recording.



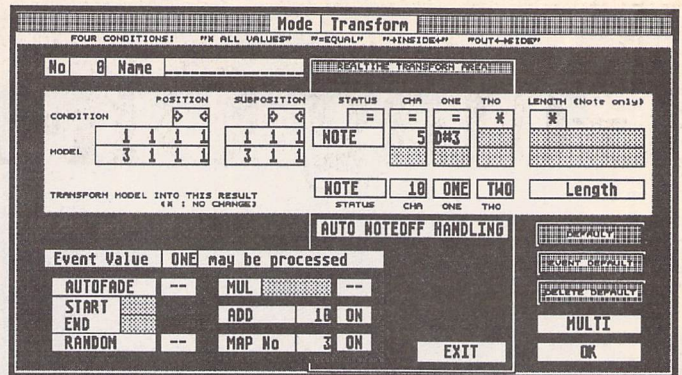
△ Fig 11: The Notation Editor. It becomes apparent when using this mode that SL is exceptionally powerful. A hidden partbox (at base of screen) is available with virtually every notation symbol you're likely to need. Like DTP, you can 'drag' each object around the screen so it looks exactly the way you want it before printing - which is exceptionally good on 24pin, ink jet and laser.

three-page article on SL that gives an inkling of its abilities. I have missed out so many of its other features, but space prevents their inclusion. (All right, all right, you can have another half page! - Ed.) SL is so versatile that two different musicians could use it very differently - one just sequencing music on the main page and another just 'drawing' the score for an orchestral piece, for instance. In the latter case, the operator, if equipped with good MIDI sound modules, can hear the orchestral piece in its entirety, once it's been drawn in using the mouse. SL, at this new low price then, represents superb value for sophisticated software that runs on our favourite platform - all in 1 Meg RAM from a 720K floppy with 8Mhz clock speed CPU - perhaps bringing an all-too-late revival to the 'Power without the Price' slogan; once Atari's proud boast.

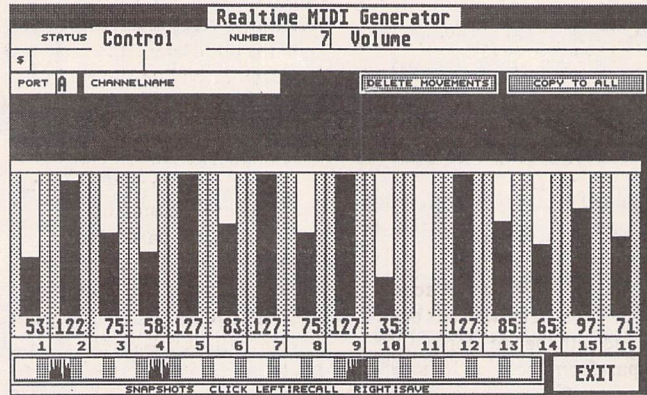
With an age of 'throw away' software where new versions appear all the time with the hidden message 'Get only the latest version' it would be easy to discard SL as 'old hat'. Far from it - it's a

superb package that many users are unlikely to upgrade from. Logic, in its present early versions, misses out many of SL's features, which means a loss of options in some areas. I'm sure, however, that Emagic will include them at a later date.

Musicians - listen up. If you can handle the learning curve, SL is well worth its weight in gold, and you'll not need to consider buying any more MIDI software for sequencing/notation again. Or are these a writer's famous last words?



△ Fig 12: The Transform Mode. The University of London should devise an A-Level course on this feature! It allows you to change groups of MIDI information already recorded into other types of MIDI information. What Transform won't do for you is probably not worth doing.



◁ Fig 13: The Realtime MIDI Generator. An odd feature at first until you get to grips with what it can do. It generates MIDI data that can either be recorded onto a track and/or sent out the MIDI OUT. Useful for MIDI volume changes, Patch changes and controlling MIDI effects units that have microscopic buttons.

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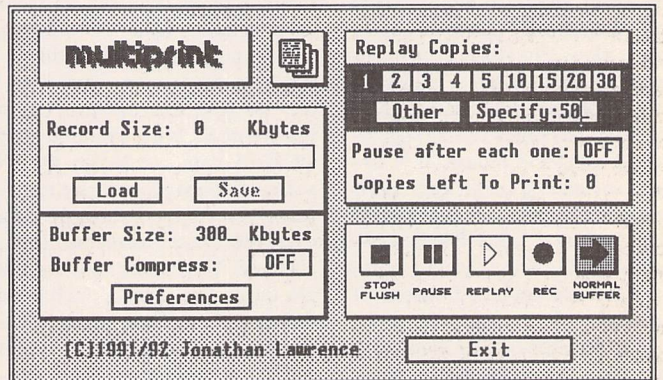
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Comprehensive printed manual

Going On-Line

Mark Baines

The Internet was born over twenty years ago when the US Defense Department network called ARPAnet was connected to other networks. The ARPAnet was experimental – the aim being to design a communications network that could withstand practically any sort of attack, especially in a nuclear war. This required the network to have no central computer or authority which would be an obvious target of attack. In 1964 the RAND Corporation presented a paper based on the principle of operating “while in tatters”, that is, it would be assumed at all times that the network is unreliable and that it should have the ability to transcend this imprecision. Therefore, all nodes would be equal in status – each would have the authority to originate, pass and receive messages. A message is split into packets, each one separately addressed. Each packet starts at a specified source node and arrives at a specified destination node, the route being variable depending on the state of the network. The route any one packet takes is not important. What matters is that each packet is tossed from node to node until it gets closer to its destination and finally arrives. If any one part of the network is destroyed, the packets will find alternative routes. On this basis, ARPAnet was born in 1969 and the result today is a rugged and reliable system which has grown to hundreds of thousands of computers in 60 countries.

Domains

The nodes in this growing network of networks were quite quickly divided into groups or domains:

arpa	ARPAnet
com	Commercial organization, such as supra.com
edu	Academic institution, such as umich.edu
gov	Government body, such as nasa.gov
int	International field used by

mil	NATO US Military site, such as af.mil
nato	NATO field (being replaced by int)
net	Gateway computer between networks
org	Non-profit, private organization, such as fidonet.org

‘arpa’ is now practically extinct with the official demise of ARPAnet in 1989. This domain does not have full Internet access and nor does ‘nato’ which is being replaced with the ‘int’ domain.

Apart from these, all foreign computers (foreign to the US, that is) and some of the US ones chose to be denoted by their geographical location so that every country with access to the Internet has a top-level domain. If no country code exists (quite common), then it is assumed that the site is in the US.

au	Australia
fr	France
gb	Great Britain
uk	United Kingdom

There are two domain codes for the UK. ‘uk’ is the more common and usual in the Domain Name System (DNS, and the ISO 3166 standard). ‘gb’ is used mainly for X.400 addressing but there is an increasing tendency for UK sites to use ‘gb’ so the two are becoming synonymous.

The UK domain has various sub-domains, the two most common being:

ac	Academic institution
co	Commercial organization

These are not to be confused with the top-level domains above which generally tend to apply to US sites, but are sub-domains within the ‘uk’ top-level domain.

Domain Name System

Your postal address is based on a tree-like, hierarchical structure which is written in a top-down manner, i.e. the root is on the right, as in:

2 Broadway, Nottingham, UK

This address points to a location in the UK postal ‘domain’,

within a sub-domain called Nottingham, a street called Broadway and the particular individual unit number 2.

In the same way, each computer in the Internet has its own domain based address, for instance:

cix.compulink.co.uk
This points to the UK domain, the commercial company sub-domain, the particular company Compulink Information eXchange Ltd and their host computer called ‘cix’.

Another, ic.ac.uk, is an academic institution based in the UK, which is Imperial College of Science, Technology and Medicine.

Each computer can have many users as the Internet is largely based on multiuser UNIX systems. To address a particular user on a specified computer you use that person’s ‘name’ separated from the node address by the ‘at’ character (@). So, my Internet address is:

msbaines@cix.compulink.co.uk
where I am identified on that system as ‘msbaines’ – a name unique to me at that site.

A site’s domain name is called its Fully Qualified Domain Name (FQDN) and therefore consists of the name of the host computer and a list of all the domains it is a part of up to the top-most level. The root level is common to all and so is not referenced. There are several reasons why this system is used. It is easier to understand and remember than the IP Address (see below) and also, that the computer at a site may move its physical location without having to change its FQDN although its IP address would have to change. However, IP Addresses came first!

IP Addresses

Each computer in the Internet has to have a unique address called its Internet Number or IP Address, which forms the real basis of routing messages from one location to another. The overall body in charge of allocating

addresses and other identifiers is the Internet Registry which is, at present, the Defense Data Network, Network Information Center (DDN NIC) based at Network Solutions Inc in the US.

The IP Address is a 32-bit number represented as four decimal numbers separated by decimal points, sometimes called a dotted quad, such as 158.152.8.253

Each number is the value of an octet (8 bits) of the 32 bits. Some networks might want to organize themselves as very flat (i.e. one net with lots of nodes) whilst others would be very hierarchical (i.e. many sub-nets with few nodes each). To cater for this there are three classes of addresses, A, B and C networks. Class A networks have the first octet as a network address (256 maximum) and the other three as host addresses on that network. Class C addresses have three octets for the network address and one host octet. Class B has two and two. The top two bits of the first octet are coded to identify the address class format. All of the Class A networks have been allocated and any new ones have to be Class B or C. There are new classes D (Multicast) and E (Experimental) but these are not common yet.

The Internet is designed to recognise both systems of addresses as the FQDN is mapped into the IP Address number. Each domain has a computer in it which provides all the necessary information to convert a Domain Name into an IP Address or vice versa and all of this and the routes the messages might take are all hidden from the user so that essentially all you need is the Domain Name and away you go!

E-Mail:
Internet:
msbaines@cix.compulink.co.uk
FidoNet:
2:259/29.10@fidonet.org
NeST:
90:105/5@nest.ftn
TurboNet:
100:106/0.10@turbonet.ftn

Beginners' Forum

Mark Baines

Number Bases – Part 2

Last month we looked at the four main number bases that we are likely to come across in computing – decimal, binary, octal and hexadecimal. Before moving on to how arithmetic is performed in these number bases I'd like to look at a third way to represent numbers – BCD.

BCD

Binary Coded Decimal (or more strictly called 8421 weighted BCD) isn't often seen these days in microcomputers but examples of it do exist. An extended form of BCD was used to code data on magnetic tape and a further derivation was used on IBM mainframes to represent characters before ASCII became the standard. BCD is a method of representing decimal numbers in binary notation in which each decimal digit is converted to a series of four binary digits. It is not unlike converting hexadecimal numbers to binary, as seen last month:

Decimal	0	1	2	3	4	5	6	7	8	9
BCD Code	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001

So, the number 1270₁₀ is coded thus:

Decimal	1	2	7	0
BCD	0001	0010	0111	0000

Now compare the BCD of 0001 0010 0111 0000 to the binary representation of 1270₁₀ which is 10011110110. They are totally different. The thing to remember about BCD is that the decimal number is "coded" into a binary notation and not converted into a binary representation.

A form of BCD is seen in the TOS ROMs at _sysbase plus 24, that is 24 bytes from the start address of the ROM code. Here is a long word (four bytes) which is the creation date of the ROM code. In TOS 1.4 it appears as "04061989" which is interpreted as the 6th April 1989 (US style date format). You should be able to see that instead of a binary representation, a hex representation has been used where the number isn't \$04061989 (decimal 67,508,617) but the four values \$04 \$06 \$19 \$89 – quite a different thing altogether.

Arithmetic

Binary addition is quite straightforward and forms the basis of addition in octal and hexadecimal. There are four rules:

0	0	1	1
+ 0	+ 1	+ 0	+ 1
-	-	-	--
0	1	1	10
-	-	-	--

The first three are simple enough and the last one gives the result 10₂ which is binary for two.

OK, let's add together 01101₂ (13₁₀) and 0110₂ (6₁₀).

First	0	1	1	0	1	
Second	0	0	1	1	0	+
	-	-	-	-	-	
Sum	1	0	0	1	1	
	-	-	-	-	-	
Carries	1	1				

When there is a carry, add the first two numbers according to the rules, then add the result to the carry.

Another example:

	1	0	1	
	1	1	1	+
	-	-	-	-
	1	1	0	0
	-	-	-	-
	1	1	1	

Octal

There are two methods (besides a calculator!) for octal addition. One is to convert the octal number to binary, add then convert back to octal. The other is to use an octal addition table:

+	0	1	2	3	4	5	6	7
0	0	1	2	3	4	5	6	7
1	1	2	3	4	5	6	7	10
2	2	3	4	5	6	7	10	11
3	3	4	5	6	7	10	11	12
4	4	5	6	7	10	11	12	13
5	5	6	7	10	11	12	13	14
6	6	7	10	11	12	13	14	15
7	7	10	11	12	13	14	15	16

Some examples: 217₈ plus 165₈. Convert to binary, add and convert back again (see last month).

Octal	2	1	7	=>	010	001	111
	1	6	5	+	001	110	101
	-	-	-		---	---	---
	4	0	4	<=	100	000	100
	-	-	-		---	---	---

The same sum but using the table:

Octal	2	1	7	7 + 5 = 14, ie 4 carry 1
	1	6	5	+ 1 + 6 = 7, + 1 = 10 ie 0 carry 1
	-	-	-	2 + 1 = 3, + 1 = 4
	4	0	4	
	-	-	-	

Hexadecimal

The methods for adding two hex numbers together are the same as for octal numbers, that is, conversion to binary and the use of a table. I shall leave it as an exercise for the reader to construct a hexadecimal addition table. Review last month's material first and look for the pattern to make life easier.

Hex	A	2	1	=>	1010	0010	0001
	3	F	8	+	0011	1111	1000
	-	-	-		-----	-----	-----
	E	1	9	<=	1110	0001	1001
	-	-	-		-----	-----	-----

Subtraction

There are two ways to represent negative numbers in binary. One is to use an explicit sign bit as the leftmost Most Significant Digit (MSD) and the other is to use the 'numbers complement' method.

Using an explicit sign bit ('0' for '+' and '1' for '-') means that you have one bit less to represent the number and so, although the range is the same, the largest number you can represent is halved (why halved?). Therefore, in an unsigned byte the range of values available is from 0 to 255₁₀ but in a signed byte where the eighth bit is used as the sign bit, the range of values is -128₁₀ to 127₁₀. Using just three bits, where one is a sign bit, we have the following:

		Sign bit		
Decimal	+3	0	1	1
	+2	0	1	0
	+1	0	0	1
	0	0	0	0
redundant	-0	1	0	0
	-1	1	0	1
	-2	1	1	0
	-3	1	1	1

Notice that the range is from +3 to -3.

Number Complement

Take a car milometer. If you run it backwards past zero you get 999999 then 999998, 999997 and so on. In one sense 999997 represents -3 miles. There is no sign, it is implicit and contained within the representation of the number. However, one drawback of this method of representing negative numbers is that you can't have +999997 and other similar large numbers. Where would the positive and negative numbers meet?

In binary there are two types of complement, 'ones complement' and 'twos complement'. To find the ones complement of a binary number you just simply turn all the '1's into '0's and the '0's into '1's, a process called a NOT operation. Adding one to the result will give the twos complement.

0 1 0 1 1 0 0 1	= 89 ₁₀
1 0 1 0 0 1 1 0	ones complement
	1 +
1 0 1 0 0 1 1 1	twos complement

To turn a complement of a number back you follow the same rules, so a complement of a number has the number as its complement.

Notice what happens to the leftmost (MSD) digit. Yes, it also becomes a '1' for negative numbers although as mentioned above, this is implicit not explicit as the other bits are not the same as for explicit signed bit numbers, as the following shows:

Ones complement method:

		Sign bit		
Decimal	+3	0	1	1
	+2	0	1	0
	+1	0	0	1
	0	0	0	0
redundant	-0	1	1	1
	-1	1	1	0
	-2	1	0	1
	-3	1	0	0

Twos complement method:

		Sign bit		
Decimal	+3	0	1	1
	+2	0	1	0
	+1	0	0	1

0	0	0	0
-1	1	1	1
-2	1	1	0
-3	1	0	1
-4	1	0	0

Notice that the twos complement method has a greater range (+3 to -4) than the other two methods and there is no redundant 'minus zero'. For this reason and because arithmetic is easier with this method, the twos complement representation is preferred.

Addition of negative numbers is now quite simple. Add -110 and -110 in binary should give -210:

Twos complement	1	1	1	=	-1 ₁₀
	1	1	1	=	-1 ₁₀
	-	-	-	=	--
	1	1	1	0	= -2 ₁₀
	-	-	-	=	--

The MSD on the far left is ignored as would a '0' be ignored if in front of a positive number, so we have 110₂ which, from the above table, is -2₁₀.

Subtraction

A number may be subtracted from another by adding its complement. Take 15₁₀ minus 9₁₀. We will use a standard eight-bit representation as is common in some registers inside CPUs (most registers are 16-bit or 32-bit but that just makes for unnecessary complication here).

0 0 0 0 1 0 0 1	+9 ₁₀
1 1 1 1 0 1 1 0	ones complement
1 1 1 1 0 1 1 1	twos complement -9 ₁₀
0 0 0 0 1 1 1 1	add to +15 ₁₀
1 0 0 0 0 0 1 1 0	= 6 ₁₀

Again, the MSD or ninth bit is lost as it falls outside the size of the CPU register. It can safely be ignored and makes no difference to the result.

Multiplication and Division

The full details as to how computers do multiplication and division is beyond the scope of this article. Simply, binary multiplication is done by a series of shift operations and additions and division is done by shifts and subtractions. A shift operation is where bits are moved along the storage register to the left or right. One shift to the left corresponds to multiplication by two and one shift right corresponds to division by two.

	0 0 0 1 1 0 1 0	= 26 ₁₀
shift left	0 0 1 1 0 1 0 0	= 52 ₁₀
	0 0 0 1 1 0 1 0	= 26 ₁₀
shift right	0 0 0 0 1 1 0 1	= 13 ₁₀

I hope that has given you some useful background. Next month won't be so hard on the brain!

Send me a letter or EMail with ideas for future articles. Thank you for the letters received so far. Although I can't promise to respond to all personal queries, I'll do my best if a SAE is enclosed. You will also find me on CIX and 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: Internet: msbaines@cix.compulink.co.uk
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

DESKTOP DISCUSSIONS

1993 in Review

It's that time of year again, and so William Hern takes a look back at the events of '93 and assesses the prospects for the ST scene in '94.

For many of us 1993 was a frustrating year as for the first time in its history the ST was not the centre of attraction. Rumours of a new Falcon casing and an 040 version of the machine surfaced periodically but nothing had appeared by the end of the year as the company concentrated its efforts on a certain other product. At least it was now possible to buy a Falcon – IF you knew it existed AND you could find a dealer who sold it. Given the lack of promotion that was not an easy task.

Considering all this, was it really surprising that sales of the Falcon were unspectacular? After the initial rush by the die-hard ST community to upgrade to the latest and greatest, where were sales going to come from? The situation was made worse by the lack of any killer software application which on its own could provide a reason for buying one. There was a lot of good solid software written but most of it was aimed at niche markets.

The most surprising event of the year was the return of the STFM in the UK. What was truly amazing was that it wasn't just a surprise to you or me – two

months after the promotion began, Atari US still hadn't heard about it and were continuing to call it a hoax. The machines have sold well at £169 and may help to re-invigorate the ST's presence in the low end games market, but it's hardly going to rejuvenate the entire ST sector. However, as Atari's intent was simply to get rid of excess stock from around Europe then it must be considered a success.

A noteworthy trend of the year was the growing co-operation between HiSoft and Atari. Appointing HiSoft as distributors for MultiTOS was a pretty smart move on Atari UK's part. It saved them the trouble of marketing and distribution and HiSoft got the rights to the year's most eagerly anticipated product. Everyone was a winner except for those who believed that system software was a fundamental right and grumbled that it ought to be given away free.

I can't write an end-of-year column for '93 without at least briefly mentioning the J-word. There had been rumours of new video consoles in the works for years but gradually, during 1993, firm details began to emerge from Sunnyvale. Interest mounted throughout the early part of the year and once Atari announced that IBM was to be the manufacturer then those outside the computer world also began to take note. Atari's stock began its meteoric climb that would take it from under a dollar to nearly thirteen dollars by the Jaguar's launch in November.

As readers of my previous end-of-year columns will know, I always like to mention a few outstanding new products. Geneva, Gribnif's multi-tasking environment, definitely wins my vote for

best new software application. It's stable, beats MultiTOS hollow in terms of software compatibility, has some great features and yet it only takes up a frugal 150K of memory. The best thing about it though is that it is only going to get better. Couple it with the new Neodesk 4, which is fully Geneva integrated, and you have a superb working environment. I didn't think that I'd be saying this a year ago, but it's a pity that MultiTOS is the officially endorsed product and not Geneva.

The other product that I'd like to give special recognition to is Scott Sanders' book "The Atari Compendium" which is an excellent one-stop programming reference for all ST computers. GEMDOS, MiNT, Line-A, memory maps, hardware – it's all in there. It won't teach you how to program but if you already have the basic skills then there is no better reference. Getting hold of this book internationally is getting easier as well now that HiSoft are marketing it in the UK and Paragon Computers in Australia. Users in other countries should contact SDS in America directly.

I would also like to mention once more the Falcon FactFile. This service allows Falcon owners to find other users with similar interests so that they can help each other out and swap hints and tips. FFF is run by two hard working volunteers Colin Fisher-McAllum and Kevin Beardsworth. You can obtain a registration form by writing to the FFF at 11 Pound Meadow, The Green, Whitchurch, Hants RG28 7LG and enclosing a stamped address envelope (this is very important as the service is free). If you're a British Falcon owner then you really ought to register – the very least you'll get out of it is some

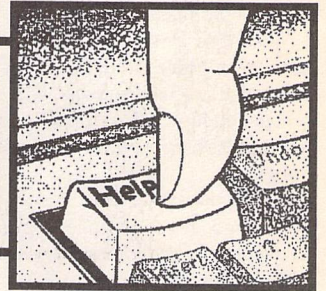
quality PD software.

So much for '93; what about '94? I have a feeling that it will be an even more frustrating year for ST owners. Like it or not, the Jaguar is now the centre of attention for Atari and that must have some impact on the commitment to ST research and development. Atari's sales predictions for the Jaguar are ambitious – their sales projections in 1994 are half a billion dollars and twice that for the following year. If these figures come true then the company is going to have to do some massive upscaling to expand from the current four hundred plus workforce. The last time the company had that sort of revenue was back in the early eighties and then they had over ten thousand employees. All this scaling up will unfortunately make continued ST product development a low priority.

Rounding Off

One small blessing for the ST community during 1993 was that there were few new viruses. The Mac and PC communities were not so lucky unfortunately. The situation was so bad that the writers of one of the leading virus killers produced a calendar marking all the days that had some form of virus activity on them. Of the three hundred and sixty-five days in '93, a mere twenty nine of them weren't blighted by a virus in some way or another. Surprisingly, they were all Thursdays – perhaps the virus programmers fear the wrath of the Teutonic god Thor after whom it was named. Well, you can't take any chances when dealing with a god of war...

FORUM



ST Applications

Paul L Cass – Forum STA 36
S Arnold – Forum STA 36
P R Evans – Forum STA 36
Damien M Jones – Forum STA 36

I I know that the subscription increase had been floated in these pages before it happened, but the £6.00 (33%) increase still came as a shock to me. Surely it would have been better to have increased the size of the magazine, rather than offer 'Subscriber Specials' that only a few of us might want? A few readers have already mentioned that they won't be renewing their subscriptions, so it's possible that you'll lose more than you gain by the increase.

But ST Applications is still THE magazine for the serious user. Or, to be exact, it's now

the only magazine for the serious user. I think the range of articles is about right, but it'd be nice to see a wider coverage of PD, rather than straight reviews. How about an article on putting together a HyperText application, or the pleasures and pains of running a disczine? You want them – I'll write them. (But not if you're going to sit on them for six months, as I've heard from other contributors...)

John Weller

● Yes, the new subscription rates are high, but still a lot lower than the glossies and a lot lot lower than many specialist press magazines in other markets.

The £24 subscription now reflects the actual cost of getting the magazine out every month. The subscription would have to rise even further if we increased the number of pages. For quite some time we had been subsidising ST Applications from sales of software and accessories sold via the magazine in the hope that a well marketed Falcon would revitalise the applications end of the Atari market. Now that Atari have ceased ST production and look to be sending the Falcon down the same road the TT took, this approach is no longer sensible.

Response to the Subscriber Specials has been very good so far – and they have the advantage that subscribers who buy software from us are getting a better deal and no longer have to subsidise readers who only ever buy a subscription.

Point taken on the type of articles you would like to see included. Do go ahead with the articles you have proposed. (We only sit on articles when there is no space for them – and those that need extensive editing... these often have to wait until the summer months when we have the resources to sort them out.)

Readers' Survey Results

I Right! You've carried out your Readers' Survey but I wonder how much wiser you are? Obviously analysis of the data will indicate the preferences of existing readers and should help you retain those readers if you move in the direction indicated by the survey. However, I would think that your purpose in life is to expand your readership and the survey cannot really help in that respect because

'non-readers' did not have the opportunity to comment for obvious reasons. Present readers must be more or less satisfied with STA otherwise they wouldn't subscribe to it.

It's a fact of life that the vast majority of computer users in the private home market have a games orientation; hence the numbers of 'glossies' available catering for that market. It is unfortunate but I suspect that you'll have to introduce a limited amount of space to games in the hope of gaining more readers than those you might lose. Glancing through STA's Classified Adverts indicates that you already have an appreciable number of games players although your survey results indicate 48% for less and only 9% for more games orientation. Of course perhaps these adverts for games means quite the opposite in that the games players have 'seen the light' and are moving on to a more serious path. Few are the computer owners who have never played a game, particularly those which can become quite addictive, but keeping things more in balance so that neither games nor serious applications take total priority of one's leisure time is more of a problem. Everyone has a preference and I would rather play a game than 'waste' my time fiddling around with a database for which I have little, if any, use. The same applies to Midi applications which seems to be a pointless exercise for amateur use unless the user is a reasonable musician.

For STA to survive it must cater for the majority of readers, and its present contents do not seem to fully meet this requirement; it would therefore appear that it must change so that it has a much more general appeal – gamers must put up with some serious items and conversely serious users must tolerate some infiltration of games – the problem will be getting the correct balance. Pity there is no way you can receive comments from non-readers.

R L Tufft

● Argument understood, but not accepted! The whole point of STA is that it is not a mainstream magazine and so does not have to compromise its content so that it appeals to the widest audience. Entering into a head-to-head with Europress and Future would be a rather pointless exercise!

Your figures from the classified ads could well show that games players get through

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 considerable 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.

● Editorial reply

software a lot faster than applications users! But there is possibly a case for adding coverage in ST Applications of the type of (thinking?) games that are rarely covered in depth in the glossy mags.

We have done straw polls of users who have seen copies of ST Applications but not subscribed, as well as those who have decided not to renew a subscription. The reasons for not subscribing roughly fell into four categories:

- * ST Applications was too dry, too boring, or just too damn complicated to get on with. The majority of computer users do not take their computing very seriously so are not good candidates for a serious magazine. Not everyone uses their computer at least once a week!

- * ST Applications was liked, but a subscription could not be justified. Usually not a cost issue - but many people don't have the time or inclination to read a magazine every month. These are often the 'readers' who just buy occasional samples and back issue.

- * A friend, relative or colleague already had a subscription to ST Applications!

- * Not got around to sending off the cheque!

Magazine Making

Q I notice from the Credits in each issue of ST Applications how it has been typeset and how the text has been prepared. If one was thinking of publishing, for example, a small local advertising newspaper, how would a sub-contractor printer be able to produce it? Would such a printer require to have an ST and the same DTP and word processing software as the newspaper was written in? I would guess that most printers would probably work with PCs or Apple Macs. If this is the case, what would I do to get round this problem, or am I off on completely the wrong tack?

Hugh Lee

- Nothing so futuristic! We simply print out the magazine artwork to an HP LaserJet, paste in any adverts and other odd items of artwork, and send these 60 A4 pages off to the printers. They photograph this artwork and use the resulting film to make up a set of plates that are used to put the ink onto the pages that you are reading. The DTP package and computer platform we use are of no interest to printers - as far as they are concerned we could be making up the artwork with a quill pen.

In theory we could be sending the pages in an electronic form on disk for the printers (or a bureau) to output to film, so bypassing the photography stage. (In time DTP packages will output directly to plate making machinery.) But the cost savings are nil and there are advantages to leaving the preparation of the final film in the hands of skilled technicians.

Shopping List

Gary Coxhead - Forum STA 36
John Stean - Forum STA 37

I Re Gary Coxhead's appeal for "one or two things that will breathe new life into my machine": it depends very much on what you're using it for, but there are three pieces of hardware that I'd definitely recommend: a hard drive, an HP DeskJet and a trackball.

A hard drive will not only give you extra storage space and much faster loading times, but it'll also revolutionise the way that you work. Having all your programmes in the one place means that you can, for example, create a picture in your usual art programme, save it, drop out of that programme and quickly load another one, load the pic, use a particular option that the first prog doesn't have, save, and then return to the main programme. Not having to swap discs (or wait forever for a prog to load) makes you more adventurous and willing to experiment.

The prices charged for ST hard drives put them outside the range of many users, but there's a good (and reliable) way of reducing the cost. Look through MicroMart for a secondhand SCSI drive, and connect it to your ST with an 'ICD The Link' interface. You don't need to open up the drive or do any soldering; just connect one end of the Link cable to the Centronics socket on your drive, and the other end to the ST's DMA port. Simple! You can run up to 8 SCSI devices via the one Link, which means that you can add an extra drive at a later date. The Link will cost you about £80, and expect to pay roughly £1.00 per Meg for a secondhand SCSI drive. This way an 84 Meg drive (+ The Link) will cost you £165, compared to £230 - £299 for a new one.

I'd put an HP DeskJet printer very high on any shopping list. (What? Even your weekend trip to Sainsbury's? - Ed.) Its 300dpi capability will improve your DTP printouts dramatically, and virtually all programmes have a driver for it. It also comes with a three year guarantee. The best bet would be the colour model (550C), as it's not that much more expensive than the mono version, and you can still use black cartridges in it. Don't be put off by the high price of the cartridges; most users refill their old ones with a syringe and fountain pen ink.

A trackball means never having to clear space for the mouse. My own one's a rewired 8-bit Atari model, with most of the case trimmed off and inlaid into my (wooden) desktop, but you can buy an ST version for £30 - £35 that you can use in your lap. It might not sound like much of an upgrade, but it's a lot more convenient than a mouse, and doesn't give you aching shoulders!

Another worthwhile upgrade would be TOS 2.06. This gives you faster disc access, the ability to move any programme or file to the desktop, and many other sexy features. It really does make a difference when you can set up your desktop exactly how you want it. Have fun!

John Weller

- Beware when buying SCSI drives new or secondhand. The Link does not support all flavours of SCSI drive and most SCSI drives have a 50-way connector rather than a Centronics interface.

Hard Drive Size

R Figueras - Forum STA 26

I I have some information about a question I had in the issue 26 Forum. I don't know how often you get answers, and I would think it depends on how many readers who have answers to the question and how well formulated the question is. I did not get any information. The question was: is it possible to change the bare drive in a Megafile 30, to make it 85 or 120Mb? I would think that quite many owners of Atari Megafile HD would like to convert them to a bigger size. Anyway the answer is not interesting for me anymore, as I sold my Megafile 30.

But, could I live without a HD? Of course not, and as I am the owner of a Mega ST4, I built in a 120 SCSI Quantum HD inside the Mega case. It works perfectly and I would recommend it to any Mega owner who wishes to have a HD. It is cheap, takes no place, and it is as silent (or loud) as the Mega. If any reader is interested in details do not hesitate to write to me.

I have written a short article in Swedish about the building of the HD in the Mega ST case and could try to translate it if enough people are interested.

R Figueras

New Driver

I I have just purchased a System Solutions 85 meg "Minis" Hard Disk to add to my 1 meg STFM and find it the ideal solution for anyone who, like me, is short of desk space. It is very small, standing upright in use, and very fast.

I had intended to use SuperBoot with the hard drive, but discovered that the latest release of the excellent ICD software supplied has the ability to boot from any partition.

I have divided up the drive into 9 partitions of various sizes, 3 of which contain just the one main program. An AUTO folder is placed in each partition containing the Auto Programmes needed with the main program. Accessories and the ICDBOOT.SYS hard disk driver are placed in the root directory.

To use, the computer is booted and when the ICD Logo appears the appropriate key (C to K) is pressed which takes you directly to that drive. As the drives containing one main program have been set up to Autoboot using "Install Application" from the GEM desktop, the program is automatically loaded ready for use, all by pressing just one key.

I am getting the following times from coldboot to fully loaded program: Calligrapher - 16 secs, Easy Text Pro - 20 secs, and Time-works - 24 secs. These times include setting the internal clock with BICLOCK and with the read/write caches off to save memory. Previously, using two floppy disk drives, Time-works was taking 1 min. 50 secs to load, which shows the great speed of a hard disk.

Finally, has anyone else had compatibility problems with Warp 9 and Trimfont's Fontxpander? I can use them together only if I dis-

able Warp 9's EosTimer ACC which means that I cannot use the Extend-O-Save modules. Any ideas would be appreciated.

Trevor H Burlingham

● No, but we have passed details of the problem on to both CodeHead (Warp 9) and Jeremy Hughes (Fontxpander), and so a solution should arrive soon.

1st Word Page Numbers

Q Could you tell me how to stop 1st Word from printing the page number at the end of the page as this does not look good on one-page letters?

A J Burnet

● The old ones are the best. The layout option in 1st Word has the page number assigned to the middle footer by default. You can simply delete this and the page number will not be printed. As the layout settings are kept with the document you can avoid the need to change this for every letter you write by having a default document that has the page numbering removed.

DB Master One

Q I have a copy of the Public Domain database 'DB Master One' which I find very useful, even though it has been around for a long time. As you probably know, it has two modules: 'Make_One' and 'Use_One'. A third module, 'Move_One' was originally issued as 'Shareware' to enable data to be moved as an ASCII file into other applications. I would like to obtain this third module, but as yet I have been unable to trace a copy.

My modest research has turned up the following details:

- The authors do not appear to be listed in the Californian telephone directory any more.
- Their company, Stoneware of 1850 Union Street, #396 San Francisco, CA. 94123-9927, also seems to have disappeared.
- Page 99 of ST Format's book 'The Best of ST Format' (1992), suggests that a disk with all three modules is available from Softville PD (Disk ACC 26), but I believe that Softville are also no longer in business.

I hope that you will be able to find this elusive module for me.

David J Davies

● Not yet I'm afraid. DB Master One and 1st Word were bundled with the first batches of STs sold in this country. But while the rights to 1st Word passed to Atari who took a liberal view to it being freely distributed, the status of DB Master One is - as far as we know - that it is not freely distributable. This is why we do not include it in our catalogue. Stoneware did a follow up package (DB Master 2?) that allowed data to be printed to a disk file. We used this to transfer the original ST Club cus-

tomers database over to Superbase Professional.

If no-one can come up with a copy of the Move_One module then you should be able to get an ASCII copy of your database by using something like Barrel to divert data intended for the printer to a disk file. There will be some unwanted printer control codes in the file but these should be easy to remove.

Boot Sectors

I I think I may have discovered an obscure bug in TOS (what - do I hear cries of incredulity?). I recently had occasion to read a disk from a friend's wordprocessor (an Olympia viewtyper). The disk was a 3.5" double density floppy with an MSDOS format. On the ST its directory was displayed but files could not be located though they were readable on the native machine or on a PC.

Vkiller384 recorded the disk as having 16 directory sectors whereas Monomon reported 15. (Double density disks are normally formatted with 7 directory sectors on the PC or the ST.)

Bytes 17-18 of the Bios parameter block on the bootsector record the possible number of root directory entries, least significant byte first - a number 16 times as large as the number of directory sectors.

In a normal ST disk these bytes read 70 00 = 112 entries

To work out the sector number of the first file cluster, divide this figure by 16, round up to the next whole number and add the number of sectors taken up by the FATs and the boot sector.

On the Olympia disk bytes 17-18 read FF 00 = 255

If the number of entries is not divisible by 16, TOS evidently ignores any remainder and starts looking for files a sector too early.

Using Vkiller384 to set 16 directory sectors produced 00 01 = 256 and this solved the problem; the disk could now be read on the ST and on the Olympia.

If you use custom formats with unusual numbers of directory entries, make the sure the number is a multiple of 16.

A J Kennedy

Fast Basic

Q Since you no longer stock Fast Basic programs, do you have any ideas on where I can get them from, especially the Fast Basic "Runtime Disc"?

David Freer

● Computer Concepts are probably out as the last time we heard they couldn't even locate a copy of Fast Basic! The Runtime disk used to be a commercial offering that sold at around £10. A classified Wanted ad in ST Applications should find you a copy.

If we can find the original masters we'll add the old Fast Basic disks to the Standard Range PD catalogue.

HiSoft Basic

Q I wonder whether any of your subscribers can assist me.

I have two STE's, one uprated to 2Meg and TOS 2.06, the other to 1Meg, and with the original TOS 1.6, and am using First Basic.

According to the First Basic Manual, one can 'CHAIN', or 'RUN' one program from within another program, provided that both are of the same type, and in the same directory.

I have tried every way that I can think of to achieve this, but without avail. The only result is an 'internal error 4', and either "1120" or "1176", around the error line number!

I managed to borrow a Power Basic Disk to see whether I obtained better results, only to be shown four 'bombs', which, to my knowledge, is "non-existent command". I would confirm that this occurs on both the TOS 1.6 and TOS 2.06 STE's that I have, which would appear to preclude a hardware problem.

I would be most grateful if any member of the ST Club could help me out with this problem. Previous computers which I have used have all allowed the practice, and if the ST manual also states that it can be done there must surely be a way. Any advice would be most gratefully received.

Geoffrey H G Shepperd

I I have been a computer owner for the past three years (and an Atari owner for the same length of time). During this period I have subscribed to ST Applications and can honestly say that for me it provides the best source of information and inspiration. I do occasionally purchase the 'glossies' mainly because of the contents of their cover disks, but I find they do not cover the aspects that I am interested in.

That's the creeping bit over with. Enclosed with this letter is a disk containing some small utility programs that I have written using HiSoft Power Basic (from the "Introduction to..." series). I have found that whilst there may be programs in the Public Domain written using this version of Basic there is very little with source code, whilst there are many examples using GFA Basic. I do not claim to be particularly proficient but I would like to offer this selection for your consideration, and, if of a suitable standard, inclusion in your library. On the advice of Steve Delaney of FloppyShop I have tried to comment the source code to explain the workings.

Whilst on the topic of programming, the series produced by Andy Pennel was particularly interesting to me. One aspect I am currently struggling with whilst attempting to write a database program for cataloguing my 35mm Slide collection is the scrolling of windows using Power Basic. Would it be possible to either include this part of my letter in the FORUM section asking for help, or perhaps persuade Andy to do an article covering this?

Thank you for your magazine and its support and encouragement to the faithful!

Peter Benson

Modula2

Anon - Forum STA 37

A I bought FTL Modula2 (including Library source code) from HiSoft in 91. I wasn't aware that they had stopped selling it. (WERCS came with it.)

I also bought TDI Modula2 in 1987 from Modula2 Software Ltd, 29 Alma Vale Rd, Bristol; (0272) 736014 or 742796.

Dave Ansell

Overscan and**FastCopy PRO**

Colin Field - Forum STA 34

A With regard to a member's letter in STA 34 on the question of the FastCopy track display not appearing when using Overscan: I have no such problem with Overscan but have the same problem when used in conjunction with the NVDI software accelerator. This is overcome by using the NVDI accessory and marking 'on' the Line A routine, whereupon the display is complete again.

Ian Boon

MultiTOS

Andrew S Good - Forum STA 36

A I don't understand what difference MultiTOS makes to Autorais, but AUTORAIS2 does not top a window until the mouse actually stops moving, making navigating across large inactive windows much less hazardous.

A J Kennedy

NewWord

John Stean - Forum STA 34

A For an accessory text editor try Edhak, its relative New Word, or Mortimer (this is not strictly an accessory but the effect is the same).

A J Kennedy

Opus Problems

Q There are three problems with Opus that I need help with.

- 1: The pound (£) sign won't print out when I print a sheet.
- 2: I am unable to get labels to appear in the bar charts (Chart switcher 1 position).
- 3: When using the chart switcher higher than 1, I can't get any bar charts at all. A dialogue box tells me 'dependent axis no selected ranges'. I've selected the LEGENDS and the NUMERICAL VALUES in the usual way, and

clicked on the appropriate slot in the menu (dependent axis and independent axis) and still no success. There's obviously something I'm not doing right, but what? I've read the sections on charting but I'm none the wiser.

Derek Smith

Mouse Problems

Huw Williams - Forum STA 35

Paul Kelly - Forum STA 37

A I had the same problem with a mouse that would not move in one direction; mine developed a Thatcherite tendency to move only to the right. I cleaned the ball and the surface of the rollers to no avail. Eventually, acting on the advice of a friend, I took the animal apart and cleaned the roller bearings using some iso propyl alcohol (the stuff used for cleaning gramophone styluses, tapes, etc.) and a small brush. These must have got bunged up with fluff or hair wrapped round the bearings. I have had no problems since.

A J Kennedy

I My Atari mouse suffered a "stroke" late in October. His left side was affected, the symptoms being a limitation of movement on the left microwswitch and a sluggish response. I purchased a Speedmouse from Ladbroke and have noticed that Speedmouse when unattended has a tendency to wander off towards the right side of the screen and occasionally towards the bottom.

I suggest that the problem lies in the mousemat. Mousemats are made of an elastomeric material called Neoprene (also used for wet-suits). One of the properties of an elastomer is its ability to recover its original shape, but with repeated or prolonged stretching the recovery to the original shape may not happen immediately. However, given time, the material will usually recover. The material is said to have a "memory" (I am not kidding). You can try this out by stretching a rubber band.

If you are right-handed the mousemat is placed on the right of the computer so you normally put the mouse closer towards the left side of the mat. I believe that the arm action in moving the arm (and mouse) to the right is somewhat heavier than when moving back to the left, thus the action of the ball in the mouse tends to stretch the mat locally in the area of the ball towards the right. When the mouse is allowed to sit on the mat after repeated use the Neoprene's "memory" comes into action and turns the ball, resulting in movement to the right of the mouse pointer. Why does it not happen with the Atari mouse? Well the mat will still try to recover but as the Atari ball is much heavier the tendency is to force the ball hard (i.e. trying to jam it) against the rollers rather than turn the ball (hence the stickiness of the Atari mouse - not helped by dirty rollers).

The smaller ball in the Speedmouse turns more easily and with the higher magnification of movement the resulting movement of the mouse pointer is more noticeable.

I must declare an interest as I worked for the DuPont company which manufactures Neoprene in the UK but I am now retired.

George E Hogg

Quicker STE Boot

Paul Dion - Forum STA 36

A A very quick answer... I seem to remember that the reason for the seven second delay after turning the STE on is so that your hard drive has a chance to get up to speed before the machine tries to access it.

John Weller

- TOS 1.6 shares this feature with TOS 2.06 in the Mega STE.

PD Feedback

Barrie Stott - Forum STA 36

Q In STA 36 I had some questions and comments about PD software. This is a further submission on the same lines.

1. Among other things, I asked about getting full EMACS running. Someone (I think his name was Dave Wade from Manchester) rang me to say that environment variables had to be declared in unixmode. I had to define an environment variable TERMCAP to tell the program where my termcap file resided. Its address is g:\bigemac\etc\termcap and to inform EMACS of this I had to set TERMCAP to /dev/g/bigemac\etc\termcap.

Doing that enabled me to get into the program but there were still problems. In trying to get access to the online information - the only sort I seem to have - I was told 'Cannot open load file: info'. Even if I could get past this hurdle, there are probably more lurking in the future so I've come to the conclusion that, sadly, the program is not really in a usable state.

2. There is an undesirable interaction between LetEmFly from DMG.38 (highly recommended by Joe Connor in STA36) and Superbase Pro. With LetEmFly active, a bit of Superbase use causes menus to become virtually unusable. Menu droppings are left on the screen and menu items are offset vertically so that selecting an item actually selects what would be in that position vertically without the offset; e.g., selecting the name which should be in the 4th position vertically could cause the action which properly corresponds to the 5th item to be obeyed. The good news is that turning off LetEmFly before entry to Superbase using the configuration accessory prevented problems - for me at least.

3. I tried DC STUFFER from UTI.306 today. It's supposed to let me have lots of accessories and select the ones I want dynamically. All I got was four bombs whenever I tried to boot. Help with this would be appreciated if someone knows a way to get it working. I have a Mega4 with TOS1.4.

4. Does anyone know of any PD software

which allows text printing on an Atari Laser printer in landscape mode? I'd really like something to print TeX DVI files in that mode.

5. Does anyone know where I can get information on DRI object file format, GNU C object file format and GNU assembler syntax?

Help with any of the questions would be much appreciated: either through STA or, preferably, directly to me on 0942-817892. Barrie Stott, 9 Bankfield, Westhoughton, Bolton BL5 2QG.

Barrie Stott

Superboot

Alan Kennedy - Forum STA 36

Geoff Wilson - Forum STA 37

A Alan Kennedy's problem with DESKTOP.INF has a simple solution. After saving the Desktop (either DESKTOP.INF or NEW-DESK.INF as appropriate) the resultant file must be copied from the root directory of the boot disk/partition into the SUPERBT folder which lies within the AUTO folder where Superboot was originally installed.

It is easy to forget to do this, especially when the original installation of Superboot lies many months in the past. However, if one refers to Disk Mag DMG.35 and to the Z*NET ONLINE MAGAZINE (Issue 498) contained therein, one finds that a small program called COPYINF_26 (COPY_INF v.2.60 by Jeffrey Wisniewski) will automatically copy the appropriate file into the SUPERBT folder (presumably when the Desktop is saved). This little program is also applicable apparently to other boot utilities including X-Boot and Desk Manager.

Although Version 2.6 of COPY_INF is dated April 1st 1993 it should nevertheless be OK! I have no idea where to get hold of it, so if anyone already has a copy I would be most obliged for a call on 031 226 7092 or 0764 655392.

For your further information, the latest version of Superboot is now 8.1, and this is available on ST Club disk UTIL277.

John Bratby

Technobox's Drafter

I A bargain buy from Silica Shop was Technobox's Drafter 2. Reduced to £49 from some astronomical figure, it is easy to use, but its black screen was annoying. After I wrote a little program to set the screen back to white, to be run from the "run other" menu option, I found by accident that it was possible to have Drafter load with the correct screen colour by saving settings once the screen had been thus set. The same effect can be realised with the use of NeoDesk's control panel to set the palette - no doubt Atari's control panel will do the same. It isn't possible to import Campus Draft drawings into this program, despite the manual text and a very similar interface. The output program also drives my Atari laser printer, which Draft's wouldn't. There would seem to have been a trade-off here, one might think!

Derryck Croker

Falcon Compatibility

Hartley Patterson - FF STA 33

Colin Fisher-McAllum - FF STA 33

Graham Hinton - FF STA 34

Phil Hodgkins - FF STA 34

Brian Mulhall - FF STA 36

Graham Hinton - FF STA 36

Ofir Gal - FF STA 37

Jonathan White - FF STA 37

Phil Hodgkins - FF STA 37

A Many points have been raised about my letter in STA34 and words have been put in my mouth by people who cannot read what I wrote. The information I prepared was carefully researched and presented in a classified form in response to previous letters. I had hoped that this would be useful and prevent the unwary from wasting as much time and money as I have. I did not say that I expected compatibility or was having problems with it, the only problem I have is with Atari software that does not work.

As there is always a time delay of one to two months before a letter appears replies may cross, but Ofir Gal's belated letter claiming non-existent inaccuracies while being misleading and inaccurate itself does nothing to raise the standard of the debate. There is no slight in failing to understand or appreciate a particular problem, but blind denial of fact is inexcusable.

Even though updated in STA36, the information was correct when it was written in May and is still correct irrespective of later version numbers. I explained some of the criteria for compatibility and gave examples based on the software I was using and familiar with.

Of course anyone wants to have the latest versions of all software, but most companies do not inform their registered users of minor upgrades and bug fixes (unless they complain!) and there is no single source reference to the latest versions in the UK as there is in German magazines. Software companies and distributors now go out of business or change on a weekly basis so it is often not possible to obtain an upgrade even if it is known to exist.

I did not even state a version number for Rufus - this was mentioned together with other comms software that uses the ST modem port directly and is hence incompatible until a Falcon specific version is introduced. If the software in ROM did the job in the first place or there were proper system level replacements so that every application did not have to reinvent the wheel, then this type of estrangement would not keep re-occurring.

It is as useful to know that an upgrade is not required or is only required for certain configurations as it is to know that it is definitely needed. Long lists of software titles without version numbers or mention of the machine configuration are meaningless. Claims like "works perfectly" only show complete naïvety concerning complex computer software.

Diamond Back 2.51 does not work properly on the Falcon and even Oregon Research do not claim otherwise. It also has problems with some ST configurations. I have been informed by them that all reported bugs

and Falcon compatibility will be dealt with by version 3 due "late 93". I did not have Diamond Edge 1.04 at the time of writing, but it had been announced as the correct version for the Falcon hence the question mark i.e. unverified. In fact version 1.10 was released in June.

ST software with high density diskette features will not function because upgraded ST drives use a Western Digital controller whereas the Falcon uses a combination of Atari custom ICs (AJAX and DMA). Therefore listing KnifeST and DFormat is nonsense. There is no support for HD use available through TOS BIOS calls although it obviously exists within the Desktop formatting routines. Atari have refused to give information concerning this hardware and software to registered developers like myself and the only available course of action is to disassemble TOS. They cannot even provide simple information such as how to detect HD diskettes in the drive. This myopic attitude actually delays or prevents useful utilities being produced.

Jonathan White assumes that I want to just run word processing and graphics software like his and accuses me of being dismissive and unfair. I was being neither of the Falcon and if he knew half of my experience so far he would be surprised how fair I am being. If my expectations were as low I would not be disappointed, but as I expected the hardware and the software to meet its own specifications I have paid a large price for my enthusiasm. Perhaps he would like to recommend some DSP development software that actually works? The Atari/Brainstorm offerings are not up to the job.

If MultiTOS really did meet Ofir Gal's exaggerated claim the reduction in performance would not be perceivable to the user, which is clearly not the case. I cannot take MultiTOS seriously while it is incapable of the "major achievement" of keeping up with normal mouse clicks or redrawing the screen properly.

What the Falcon desperately needs and what its survival hinges on is an Operating System capable of servicing the architecture of a modern computer. These requirements have become more demanding owing to the MIDI, Serial and DSP ports as each of these alone need a response time of less than one millisecond, let alone in combination. Normal single user GEM cannot achieve responses better than ten milliseconds and MultiTOS is at least an order of magnitude worse. Neither of these systems recognise the existence of externally initiated events or accurate, high resolution timing. Once `event_multi` is called the application has lost control.

The only place that the whole problem can be solved is in the ROM and until Atari are prepared to grasp that nettle and make a clean break from the inherited ST bugs, further bodes and patches, the Falcon does not stand much chance of achieving its true potential. Until that happens, or Hell freezes over, the discussion in these pages for discerning Falcon users helping and informing one another could do without the snide "my programs work, so what?" responses.

Graham Hinton

PD and Shareware Update

Version 14.1 ~ February 1994

“ST Computer” German PD and Shareware Disks

STC.511

- * GNU-Plot: drawing program - completes STC.438-442. (M)

STC.515 Chemistry

- * Laborant 1.21: chemistry program.
- * ChemCalc 1.9: chemistry pocket calculator.
- * Molmass: gives molecular weight of molecules. (M)

STC.516 Games

- * Beta-Tau: pacman variant with some nice new ideas.
- * Okotego: simulation game. (M)

STC.518 Graphics

- * Laser Design Pro (LDP): drawing program. (M)

STC.519 Games

- * Midgard: HASC role game (M)
- * Sumkuvit II: maze game. Part 1 is on STC.379.

STC.520 Editor

- * Uni-Ed: Universal editor (M)

STC.521 Utilities

- * 8/16 MHz: toggle for Mega STE.
- * Barcode: produces barcodes for programming VCRs.
- * Fix GDOS: fixes problems with badly programmed GDOS and AMCGDOS applications.
- * Mem-Show: continuous display of free RAM.

The following disks have been compiled by ST Computer magazine in Germany. Most of the programs run in mono and the programs and documentation are usually supplied in German only.

- * Opaque Icons: more desktop symbols for Opaque.
- * Baschon: Screen saver for MS-DOS emulators. (M)

STC.522 Games

- * Rubmagic: variation on Rubik's Cube. (M)
- * Magician: HASC role game (M)

STC.523

- * Balance 3.51: table calculation.
- * Uptodate: allows Portfolio calendar data to be edited on the ST (M)
- * Video 1.2: Database. (M)

STC.524 School

- * PlanSTE: comprehensive program for school timetables - lessons and rooms. (M)
- * Timetable: updates disk STC.375.

STC.526 Games

- * Baker's boxes: economy game. (M)
- * Formula 1 Manager 2.16: Strategy game (M)

STC.527 Maths

- * Fractal 430: interesting little program.
- * FMDV2: maths program (analysis).

STC.528

- * Cartella: converts HPGL data to plotter drivers (demo version).
- * Starmaps 0.81: astronomy program for the exploring the night sky. Over 180 complete sky charts (app. 16,000 objects) and animations. (M)

STC.529

- * Backex: deletes files with certain extensions.
- * Botafogo: interface for GFA-Basic programmers. (M)
- * DeskJet: HP DeskJet 500 driver for First Word Plus.
- * DooToIcn: converts bit-map pictures to ICN format for RSC files.
- * MakeDisk 2.52: formats disks, installs executable boot sectors.
- * MIDI 8031: Sample programs.

STC.530

- * Chronos 1.24: Calculator, calendar, biorhythms.
- * FDDK: Fax driver developer kit for C programmers.
- * Totokat 1.2: generates lotto numbers.

STC.531

- * EdiTeX 1.2: text editor for TeX. (M)
- * Tabwrite: editor with special font for tables.

STC.532

- * Project Airplane: economy simulation.
- * DMA-Sound: plays sampled DMA sounds (STE/TT only)

STC.536

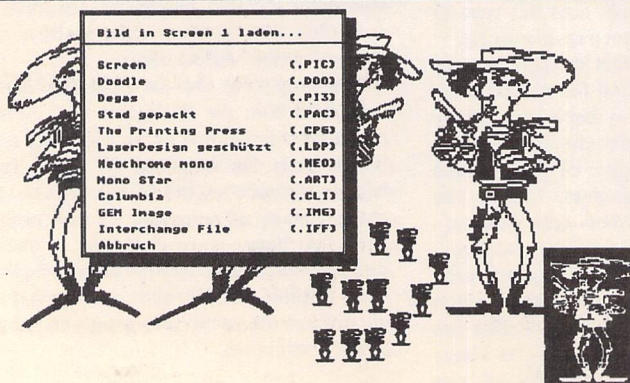
- * Text 500: word processor designed with HP DeskJet 500 in mind. (M:1Meg)

STC.537

- * Dodg'em 2: car race, maze program. (M)
- * House Quest 1 - adventure game.

LDP Datei Arbeit Block Text Optionen Drucken

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Bild 1 von 8



STC.525

MIDI

- * Editor GP8: for the Roland guitar-effects processor (M).
- * Keydrum: turns any keyboard with MIDI connections into a master keyboard with four channels (M).

◀ Laser Design Pro on STC.518.

* 4 Loses: database for videos and cassettes. (M)

STC.539

* Desert Drain 1.3: disassembler.
 * Adath: database for names, books and records.
 * Howold: calculates life expectancy from your way of life. (M)

STC.541

* Caesar: vocabulary tutorial with examples in English and Latin.
 * Galaxy 2.4: strategy game. (M)
 * Geography: quiz (Country/Capital) (M)

STC.542

* WinX 2.0: enables up to 40 GEM windows.
 * Karma: picture converter.
 * EasyFSel: routines in C for file selector.
 * TOSTC.Manager: File utility.
 * Printer: 22 HPDJ 500 printer drivers for Phoenix and Adimens.
 * Convert.CPX: converts decimal hexadecimal.

STC.543

* Wega Light: Wega developer kit for programming in Pure C.

STC.544

* NIDI-Out.
 * MIDI-Play: load and play samples from the Sample Wizzard STE. (STE/TT Only)

STC.545

* Poison?: data on chemical additives in foodstuffs. (M)
 * Murphy: Murphy's Laws.
 * Shift3: New button game.

STC.546

* Club: club data management files for use with Adimens.

STC.547

* SeekUp: eliminates TOS 2.06 doubling of the Seek rate.
 * GemRam 1.1: copies GEM to RAM, to facilitate patches.
 * Arrowfix 1.3: fixes small bug in TOS 2.06/3.06.
 * How Fast: hard disk bench marks.
 * Winni 2.00: utility for WinX.
 * Menu Deluxe: extended version of the GFA-Basic 3.x menu.
 * N-Joy Remote: 'Remote control' of programs by assigning key-clicks to joystick buttons.
 * TOSCRG 1.0: calculates and compares the checksum of TOS from 2.06/3.06.
 * ShBuf 1.0: patch program that increases the buffer in NewDesk.Inf from 4 to a maximum of 32KB.

STC.548

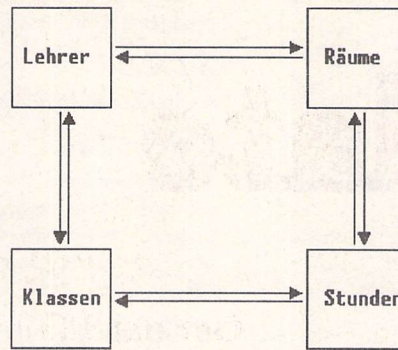
* Startext: word processor with numerous options. (M)

STC.549

* C-Gineer 403: portrays 2D structure formulae. (M)
 * X-Gineer 507: editor for Röntgen structure data. (M)

DESK Datei Instal Vorgaben Drucken Grafik Plan System

PLAN STE? Vers. 0.9



GRUNDSCHULE UND SEKUNDARSTUFE I
 Bis zu 14 Parallelklassen mit 64 Lehrern

◁ School timetable planning with PlanSTE on STC.524.

STC.550

* Crack Art: drawing program for low resolution. (C)

STC.551

* Agros: adventure, in which you have to deal with the consequences of an accident. (M)
 * Mystery Island: adventure on an island full of dangers. (M)

STC.552

* BootCopy: copies files to a RAM disk.
 * Dump-As: disk, file and RAM monitor. (M)
 * FFF: fast file finder!
 * No Click: switches key click off.
 * Set Time: sets system time.
 * STDCat 5.0: management of disks and files.
 * Unemefda: monochrome emulator for colour monitors.

STC.553

* Bits: Game. You have to find the bits... (M)
 * GPPD: motor racing. (M)
 * Kniffel: dice game. (M)
 * Lyrics: variation on Oxyd with new ideas. (M)
 * Battle: Pac man variation.

STC.554

* Alice: another little C editor (cf STC.501).
 * WF-Edit: text editor.

STC.555

* Oxyd for TT and Falcon

STC.556

* Oxyd for ST/STE mono

STC.557

* Oxyd for ST/STE colour

STC.558-559

* Sidus Astrum: program package for displaying star charts.

STC.561

* Cassette: database program for cassettes. (M)
 * Label: produces cassette labels. (M)

* Label-CAD: produces cassette labels. (M)

STC.562

* Colourshow: displays grey-shade pictures on Mono monitors. (M)
 * IconEdit: icon editor.
 * LSRtoDFN: produces RCS-readable DFN files from LST files produced by DRI-RCS 2.1 for GFA-Basic.
 * MADress: address database.
 * BNF.TOS: helps to install a Bottom-Up parser.
 * RSC-2-ASM: produces optimised assembler code from Resource files to be used directly in programs.
 * ScrShoot: snapshot utility for grabbing the screen.
 * Turn IMG: rotates IMG pictures around 90, 180 or 270 degrees.

STC.563

* Emperor: strategy game.

STC.564

* Extender: changes the extensions of whole groups of files.
 * Fuzzy-Clock: a somewhat different clock.
 * Click: replaces error blip and keyboard clicks with more pleasant sounds.
 * Make: aid for programmers. Automatically recognises which source texts have changed since the last compiler run.
 * Calendar: accessory.
 * TSWP: CPX that write protects hard disk partitions.
 * Transfer: prints bank transfer forms.
 * UnARJ: unpacks ARJ files.
 * Dictionary: over 14,000 words in a DIC file for First Word.

STC.565

* Crazy Cubes: Brain game.
 * Exodrom: ball game. (M)
 * Minen: combination game.
 * Railway Motion: game.

STC.566

* Royal Paint: paint program with 16 colours. (C)
 * Slack: drawing program. (M)

* VEC-Work: produces logos and stencils of up to ten-meters in size.

STC.567

* DiaSlide: slide show with sound effects.
* MidiScan: keeps tags on your MIDI files.

STC.568

* Wheel of Fortune: quiz game.
* Knuddels Quest: action game.

STC.569

* DG-Funk: tutorial for the amateur wireless operator test.
* Dark Room: aid for developing films.
* Vocalix: vocabulary tutorial.
* Ligatab: league table for sports.

STC.570-571

* Lap of the Gods: role game.

STC.574

* UVTLG: produces timetables for schools. (M)

* MiTel: small database for addresses and phone numbers.

* CD: small database for CD collections.

STC.575

* Ad Astra: good astrology program for producing a detailed horoscopes (M:1Meg)

STC.577

* Circles: dexterity game (M).

STC.578

* Paintshop: very comprehensive drawing program with macro programming language. (M)

STC.579

* Bootmenu: boot selector.
* Clockdrv: multi-functional utility with driver for the DCF-

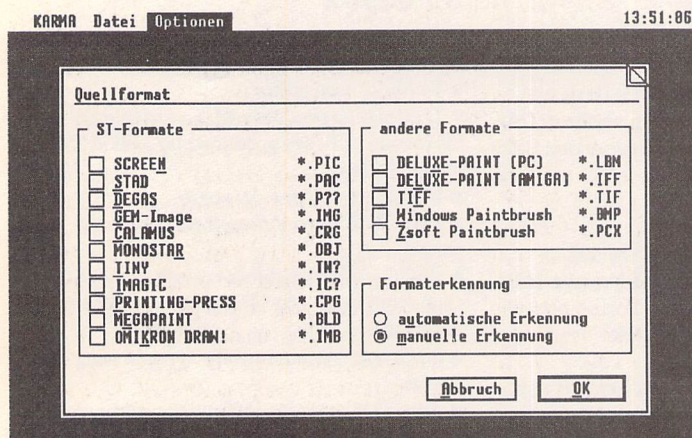
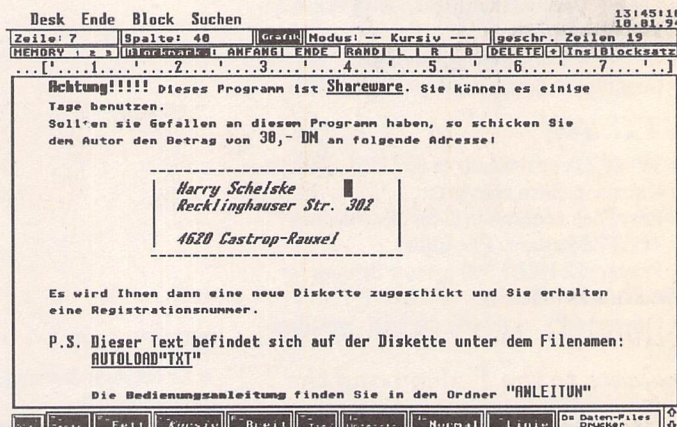
77-radio clock.

* Grob: converts IMG files to HP-48-SX compatible graphics files.

* Functionplot 1.5: discussion of curves, calculation and representation of maths functions.

* Grafias: interprets HPGL commands and sends the signals to the parallel port for a 2-axis plotter driver inc. flexible text driver.

* StartUp 3.5: boot selector with reset-proof system clock, loads GDOS driver and fonts.



< and Δ Karma
Picture converter
on STC.542.

KEY

- (M) Runs in high Resolution only.
- (C) Runs in Medium or Low Resolution Colour only.
- (1Meg) Needs at least one megabyte of RAM.

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Programmers' Forum

In this month's edition of ST Applications' regular programming column, we look at programming in colour, in particular as it relates to the Falcon and the TT.

Colour

Since the ST range was introduced, Atari have slowly been improving the video facilities, with new features being developed for each successive machine. The ST with its three basic resolutions and 512 colours, gave way to the 4096 colours of the STE, and finally to the flexibility of the Falcon with 262,144 colours. Along the way, the Mega ST introduced the blitter, and the TT weighed in with some higher resolution modes. Table 1 provides some more concrete details.

Despite large changes in the capabilities of the hardware, the fundamentals of the way the video system works have remained the same. Some background information on the structure of the colour system is provided in the Box. We have already touched on this area a couple of times in the discussions on palette switching and picture tiling (see the Programmers' Forum columns of STA 27 and 30), though these assumed a reasonable familiarity with the subject. If the picture-tiling material seemed baffling at the time, a quick read-through of the Box

followed by a review of those columns should help!

The key problem with substantial progress in such a basic area is that of compatibility. How can compatibility with existing programs be retained while the new features are bolted on to the system? On the whole, this has been achieved rather effectively. Programs that restrict themselves to using the AES and VDI should have few problems. Those that make use of the XBIOS video functions or attack the hardware directly are more at risk.

However, the lack of information about the new developments has prompted a couple of readers to write in with questions. Mark Baker from Great Bookham in Surrey is interested in the Falcon's true colour mode:

For a program I am writing I would like to allow the user to select the colour of various parts of the display. In a system with a limited number of colours available at once, this is fairly simple. In the work_out array, filled in when the virtual workstation is opened, there is a value (work_out[13]) which contains the number of colours available. I would simply display a sample of each and allow the user to choose one.

But now the Falcon is available there is a problem, because of the true colour modes. In such a mode I would want to use sliders for red, green and blue, but how do I detect it (what would work_out[13] contain for example) and how do I set the colour, knowing the red, green and blue values for it?

In fact, Mark's problem is even worse, because the Falcon has a 256-colour palette mode. Displaying a sample of each of the colours in this mode might be a little awkward. Leaving this aside, the slider-based method works quite well, as a glance at the VDI Colours CPX shows (Figure 1).

Colour: How it Works

With the exception of the Falcon operating in true colour mode, the colour system on the whole ST family uses a palette technique. In such a system, each pixel on the screen is associated with a colour index. To turn this into a real displayable colour, the video shifter hardware uses it to index into a look-up table, the palette, whose entries specify intensities for each of the red, green and blue electron guns. The colour signal for that pixel is then generated by feeding the intensity code through a digital-to-analogue converter (DAC).

In a colour palette system, two quantities affect the flexibility and performance of the display. The number of bits used to represent the colour index determines the number of entries required in the look-up table, and hence the number of colours displayable on the screen at once.

An example should help make this clear. In ST low resolution mode, there are four colour planes, or four bits of colour information per pixel. This allows colour indices ranging from 0 to 15, giving 16 colours visible on the screen at once (without any programming wizardry that is!).

So much for the number of visible colours, how is the total number of colours determined? This is simply related to the number of different intensities that can be specified for each electron gun. On the ST, each intensity code is 3 bits, allowing values between 0 and 7. As there are 3 electron guns, and eight possible intensities for each, the total number of colours is $8 \times 8 \times 8 = 512$. The STE can display a total of 4096 colours because it allows 4 bits of intensity data, and $16 \times 16 \times 16 = 4096$. The Falcon's 262,144 colours require 6 bits of intensity data for each gun.

The key point to remember about this system is that there is an indirection step - the pixel value does not specify what the RGB intensities for its colour are, it tells the machine where to find them. This has the effect that by simply changing the contents of the look-up table,

we can alter the displayed colours immediately without having to fiddle with screen pixels.

The Falcon true colour modes are fundamentally different. Each true colour pixel is represented by sixteen bits of data. However, unlike the system above, this data is not an index into a look-up table, but actually encodes the RGB intensities directly. With a total of 16 bits of intensity data, 65536 colours can be displayed.

In fact, things are a little more complicated still, as the Falcon has two true colour modes. In straightforward true colour mode, there are five bits of red and blue intensity data, and six bits of green data, giving 16 bits and 65536 colours as above. These are packed into each pixel word in the following format:

bit 15 RRRRRGGGGGBBBBB bit 0

In the even more exotic true colour overlay mode, the extra green intensity bit is replaced by the overlay bit (X), giving the format:

bit 15 RRRRRGGGGXBBBBB bit 0

In this mode, there are a total of 15 bits of colour data, which can specify 32768 colours. The overlay bit is used for video titling and other genlock applications. A low overlay bit is used to indicate that a pixel is transparent, and the underlying external video image will be visible. A high overlay bit causes the Falcon-generated colour to be displayed.

As a consequence of the way the true colour modes work, there is no look-up table, and so palette switching is not possible in true colour. Once a pixel is plotted, the only way to alter its colour is to directly alter its value in screen memory.

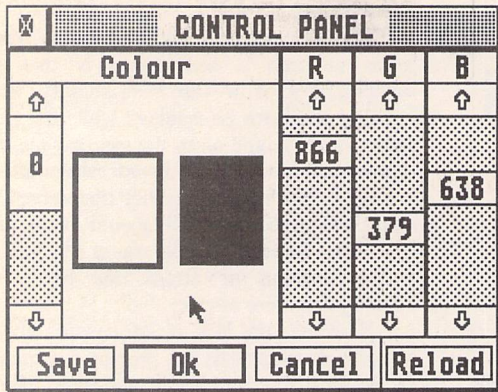


Figure 1

The CPX designed by Atari to allow setting of the colours used by the VDI.

Falcon030 video mode information

XBIOS Information

The display unit is a ST monochrome monitor.
 The video mode is 50888:
 1 bits per pixel; 88 columns; TV-type display
 NTSC format video; ST compatible
 The screen occupies 32000 bytes.
 Getrez() reports an apparent resolution of: 2

VDI Information

Screen is 640 pixels wide and 400 pixels high.
 There are 2 logical pens available to the VDI.
 The colour intensity resolution is 4 R bits, 4 G bits and 4 B bits.
 There are 4096 background colours available to the VDI.
 Screen contains 1 planes.
 Palette contains 4096 colours.

Press RETURN to exit:

Figure 2

A report on the video arrangement of a Falcon connected to an ST monochrome monitor (SM124). Note that only 4096 colours are possible, as the Falcon is forced into ST-compatibility mode with this monitor.

Detection of the configuration of the Falcon's video system is fairly easy as there are several operating system calls that can provide information. Listing 1 uses a selection of these to prepare a detailed report. An example of the output for a Falcon connected to an ST monochrome monitor is shown in Figure 2. The XBIOS contains new Falcon-specific functions that allow a program to find out about the monitor hardware, how much memory is required for a screen image and so on. More details on these can be found in up-to-date compiler manuals. These calls supersede the basic Getrez() function provided by the ST XBIOS.

Much more pertinent to Mark's question are the data obtainable from the VDI. When a VDI virtual workstation is opened using v_opnvwk(), a large block of information is written into the output array, conventionally called work_out[] or something similar. A second block of data is obtainable using the VDI vq_extnd() call (referred to as extended[] here, for convenience). The program in Listing 1 processes the most useful of these values too.

The work_out[13] entry referred to above contains the number of VDI colours that something can be drawn in. Normally this is equivalent to the number of colours that can be visible on the screen at once; in other words to the palette size. This is the case on the Falcon for the 2, 4, 16 and 256 colour palette modes. However, in true colour mode, when there are 65,536 displayable colours, the VDI still only has 256 coloured pens available to it (this is a VDI limit, not a hardware restriction). This means that work_out[13] is not a useful guide to the presence of true colour mode.

The key to detection of true colour mode is to look for the presence or absence of a colour look-up table (or palette). This information is in extended[5], which has the value 1 if such a table is present, and 0 if not, as in true colour mode. Some monochrome devices also lack a look-up table, so to be safe it is

best to check for a combination of no look-up table and more than one colour.

Colouring the VDI

Having explored the issue of how to find out if a program is being run in a true colour mode, we'll move on to the second part of Mark's question: how to set the colour.

In fact, the technique used to set a VDI colour is the same whatever type of display mode is active. The vs_color() function is used:

```
vs_color(handle, pen, rgb);
```

where handle is the VDI workstation handle, pen is the number of the VDI colour to set in the range 0-255. Pen 0 is taken to be the background colour. rgb is a pointer to an array of three words which specify the red, green and blue intensities required on a notional scale from 0-1000. It is the VDI device driver's responsibility to convert this notional scale into something that the hardware can understand.

A basic ST has a range of intensities of 0-7 onto which the device driver must map its 0-1000 span. Obviously this means that many VDI intensities will be converted to the same physical intensity, and so produce the same colour. The effect of this is that it is difficult for a VDI program to predict in advance quite how its colours will appear to the user.

Consider an example: a program sets a pen using the notional intensities (60,0,0) (these colour triplets give the intensities for red, green and blue in that order). On a basic ST, this will be rounded down to (0,0,0) which is black. On a Falcon or STE, the colour will appear as a very dark red, as these machines have the extra colour resolution to map the red intensity to some non-zero value.

This is unlikely to be a problem for programs written using the restricted colour range of the ST, but Falcon programmers trying to fine-tune their latest masterpiece to appear in just the right shade of aquamarine

should beware.

There is a way to determine what the VDI driver has done to a colour request:

```
vq_color(handle, pen, flag, rgb);
```

This function returns the colour intensities associated with the logical pen. Intensities are represented on the same 0-1000 scale as for vs_color(), and are returned in the elements of rgb[]. handle and pen have the same meaning as for vs_color(). The interesting argument is flag. If this is set to 0, the function returns the notional colour intensities that were used in a vs_color() call to define the logical pen's colour. However, if a value of 1 is passed, the function returns the intensity values that were actually used.

By calling vs_color() with a series of colour intensities and then reading back the actual values used using vq_color() with flag set to 1, it is possible to work out how the VDI will mangle future colour definitions. One way to quantify this is to derive the number of bits of colour intensity resolution available to the VDI.

Listing 2 provides a couple of functions that will do this. This code can be added to Listing 1 if required. The first function runs through all 1001 notional colour intensities counting how many different values it can read back using vq_color(). The number of values is then converted to a bit count by int2bits(). To watch the progress of these functions, simply uncomment the printf() line.

Colouring the AES

On now to another letter looking at issues raised by the extra colours of the TT and Falcon, but with a different focus. Robert Mellish sends email from Imperial College, London:

I am currently writing a program that I wish to be as compatible as possible with all the Atari ST/TT/Falcon range. One of the options in the program allows the user to set the colours used, in a dialogue box. I wish to display the choice of colours by a set of coloured rectangles in the dialogue box.

Table 1 - Video Capabilities

	Resolution (columns x rows x colours)	Colours
ST:	640 x 400 x 1; 640 x 200 x 4; 320 x 200 x 16	512
STE:	640 x 400 x 1; 640 x 200 x 4; 320 x 200 x 16	4096
TT:	640 x 400 x 1; 640 x 200 x 4; 320 x 200 x 16 320 x 480 x 256; 640 x 480 x 16; 1260 x 960 x 1	4096
Falcon:	Many including 640 x 480 x (1,4,16,256) and True Colour 320 x 480 x 65536	262144

Notes

- 1) Standard resolutions subject to expansion by overscan and/or video enhancers (Blowup/Screenblaster).
- 2) 'Monochrome' modes on TT and Falcon are better thought of as 'duochrome'. Although there is only one background and one foreground colour, these can be selected from the full palette, unlike the fixed black/white of earlier machines.
- 3) TT also supports grey-scale displays.
- 4) When running in ST-compatibility modes, Falcon only has 4096 possible colours.
- 5) See Falcon video article for more details on Falcon's capabilities.

On a standard ST or STE this is no problem, but on a TT a maximum colour index of 256 is possible. The problem I have is that the current definition of the AES graphic objects will only allow a maximum colour index of 16 to be embedded in the object description. I would like to know if the object definition has been extended for the TT and Falcon, allowing a greater range of colours in dialogue boxes. I presume that some the reserved variables ('ob_junk') in the object structure have been used.

I am aware that I could get around this problem by using PROGDEFs and having my

own object drawing code switch to whatever colour I need, using vsf_color or whatever, but for a variety of reasons I would rather not do this.

A short answer (for once!) - as far as I know, the AES object definition has not been extended on the later machines to support the extra colours. Any such changes would be likely to raise compatibility issues for existing software. It seems that Robert may have to turn, however reluctantly, to PROGDEFs in order to squeeze more than 16 colours out of the AES.

Next Month

Next month, *Programmers' Forum* will feature some more newly-rediscovered 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.

One last point, about email. Whilst I am very happy to receive contributions by email, please include your real name in the message, as cryptic alphanumeric user identifiers are not terribly useful. 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.

Jon Ellis
Programmers' Forum
29 Ashridge Drive
Bricket Wood
St Albans
Hertfordshire AL2 3SR

Email: jonellis@uk.co.compulink.cix
(from JANET)
jonellis@cix.compulink.co.uk
(everywhere else)

Listing 1

```

-----
/*
** Listing 1.
** Programmers' Forum STA 38 (February 1994)
**
** Simple program to interrogate the Falcon
** operating system about the status of the
** video system.
**
** Compiler system: Lattice C v5.60
** Compile options: Phase 1: -cargfku Phase 2: -ms
** Link with C.O, LCG.LIB and LC.LIB
** Written on 16th December 1993
*/

#include <aes.h>
#include <mode.h>
#include <osbind.h>
#include <stdio.h>
#include <vdi.h>

/*
** Prototype the functions...
*/

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

/*
** Falcon video adaptors...
*/

char *vdus[] = {"ST monochrome monitor", "ST colour monitor",
               "VGA monitor", "TV display", "Television"};
char *bits_pixel[] = {"1", "2", "4", "8", "16", "Unknown"};
char *vga[] = {"TV-type", "VGA-type"};
char *format[] = {"NTSC", "PAL"};

/*
** General global variables...
*/

short workin[11] = {1,1,1,1,1,1,1,1,1,1,2};
short workout[57], extended[57];

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

int main(int argc, char **argv, char **envp)
{
    int vid, mode, bps, columns, *rgb;
    char *type, *format;
    unsigned long screen_size;
    short handle, dummy;

    printf("\033E          Falcon030 video mode information\n");
    printf("-----\n");
    if ((vid = Motype()) > 3)
        vid = 4;
    mode = Vsetmode(-1);
    bps = mode & 0x07;
    if (bps > 4)
        bps = 4;
    columns = (mode & 0x08) ? 80 : 40;
    type = (mode & 0x10) ? "VGA" : "TV";
    format = (mode & 0x20) ? "PAL" : "NTSC";
    screen_size = VgetSize(mode);
    appl_init();
    handle = graf_handle(&dummy, &dummy, &dummy, &dummy);
    v_opnvwk(workin, &handle, workout);
    vq_extnd(handle, 1, extended);
    rgb = get_intensity_res(handle, workout[13]-1);
    v_clavwk(handle);
    appl_exit();

    printf("XBIOS Information\n-----\n");
    printf("The display unit is a %s.\n", vdus[vid]);
    printf("The video mode is %04X:\n", mode);
    printf(" %s bits per pixel; %d columns; %s-type\n",
           bits_pixel[bps], columns, type);
    printf(" %s format video", format);
    if (mode & 0x40)
        printf(" Overscan");
    if (mode & 0x80)
        printf(" ST compatible");
    if (mode & 0x100)
        printf(" %s", (mode & 0x10) ? "Double-lined" : "Interlaced");
    printf("\nThe screen occupies %lu bytes.\n", screen_size);
    printf("Getrez() reports an apparent resolution of: %d\n", Getrez());

    printf("\n\nVDI Information\n-----\n");
    printf("Screen is %d pixels wide and %d pixels\n",
           high.\n", workout[0]+1, workout[1]+1);
    printf("There are %d logical pens available to the VDI.\n", workout[13]);
    printf("There are %d background colours available to the VDI.\n", extended[1]);
    printf("Screen contains %d planes.\n", extended[4]);
    if (extended[5] == 1)
        }

```

```

if (workout[39] == 0)
    printf("Palette is larger than 32767 colours\n");
else printf("Palette contains %d colours.\n",workout[39]);
}
else if (workout[13] > 1)
    printf("True colour mode.\n");

printf("\nPress RETURN to exit:");
getchar();
return(0);
}
    
```

Listing 2

```

/*
** Function to determine the number of bits of
** colour resolution available to a VDI program.
** The arguments are the VDI workstation handle,
** and the index of a logical pen to use for
** testing. The function returns a pointer to
** a static array of 3 ints containing the
** resolution in bits for red, green and blue.
**
** Usage: result = get_intensity_res(handle,pen);
**
** int *get_intensity_res(short,short);
**
*/

int *get_intensity_res(hand,pen)

short hand, pen;

{
    static 'nt res[3];
    int f;
    short rgb[3], old[3], existing[3];

    res[0] = res[1] = res[2] = 0;
    old[0] = old[1] = old[2] = -1;
    vq_color(hand,pen,1,existing);
    for (f=0; f<=1000; f++)
    {
        rgb[0] = rgb[1] = rgb[2] = f;
        vs_color(hand,pen,rgb);
        vq_color(hand,pen,1,rgb);
    }
}
    
```

```

if (rgb[0] != old[0])
{
    old[0] = rgb[0];
    res[0]++;
}
if (rgb[1] != old[1])
{
    old[1] = rgb[1];
    res[1]++;
}
if (rgb[2] != old[2])
{
    old[2] = rgb[2];
    res[2]++;
}
/* printf("Index %d -> (%d,%d,%d)\n",f,rgb[0],rgb[1],rgb[2]);*/
}

vs_color(hand,pen,existing);
res[0] = int2bits((unsigned)res[0]);
res[1] = int2bits((unsigned)res[1]);
res[2] = int2bits((unsigned)res[2]);
return(res);
}

/*
** Function to calculate the number of bits required
** to encode a value. The argument is the value, and
** the return minimum number of bits needed.
**
** Usage: bits = int2bits(val);
**
** int int2bits(unsigned);
**
*/

int int2bits(val)

unsigned int val;

{
    int bits;
    unsigned long accumulator;

    for (bits=0,accumulator=1; val>accumulator; bits++,accumulator<<=1)
        continue;
    return(bits);
}
    
```

X-Debug

Advanced Debugger for Atari ST/TT computers

X-Debug is an advanced debugger for the Atari range of computers. It is both a low-level debugger, showing memory dumps and register contents, and also a medium-level debugger, understanding about certain high-level languages and allowing source display single-step, and local variable access, for example.

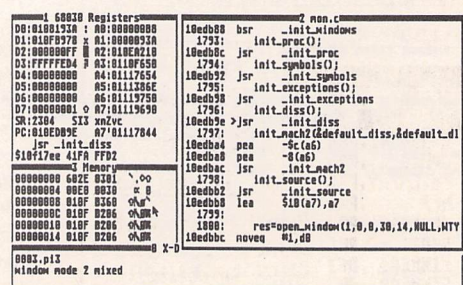
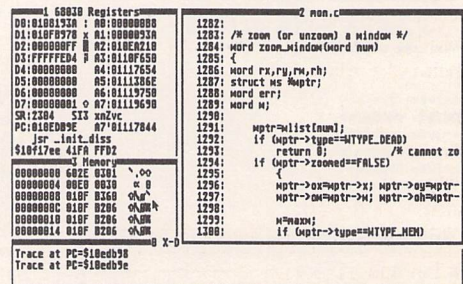
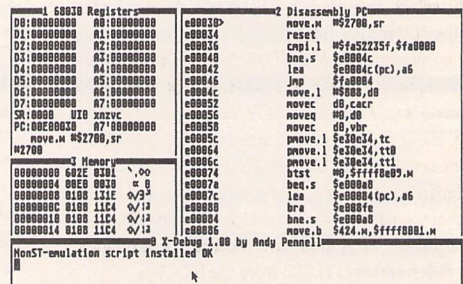
The best support is for Lattice C, as that is the only compiled language that outputs full debug information, but it also supports line-number debug (as created by HiSoft Basic and Devpac 3), and symbol-only debug (usable with virtually all ST compilers).

Crucial to the whole debugger is the X-Debug language. This is a simple yet powerful script type language that allows complex operations to be built up from a sequence of standard operations. It supports a full expression evaluator, aliases, and procedures with parameters. It is also an important factor in customising the user interface, allowing specific commands to be attached to particular keypresses.

X-Debug runs on STs and TTs with any monitor type. One megabyte of RAM is recommended, and TOS 1.4 or later avoids problems with larger programs. Written by Andy Pennell, the creator of MonST.

£24.95

The ST Club
 2 Broadway
 Nottingham
 NG1 1PS



Shareware Column

This month Joe Connor takes a back seat as Graeme Rutt climbs on board the supported Shareware bandwagon, offering full UK support for GEMView...

Discussions in the CIX On-line conferences 'staplications' and 'atari' have shown a healthy level of support for the supported Shareware concept with several other Atari enthusiasts keen to get involved. This column will try to provide a pipeline between On-line and Off-line activity and I hope everyone will contribute to the discussions and stay in touch with the latest developments. I can be contacted at: 65 Mill Road, Colchester, Essex CO4 5LJ; Email: jconnor@cix.compulink.co.uk

GD-Flag

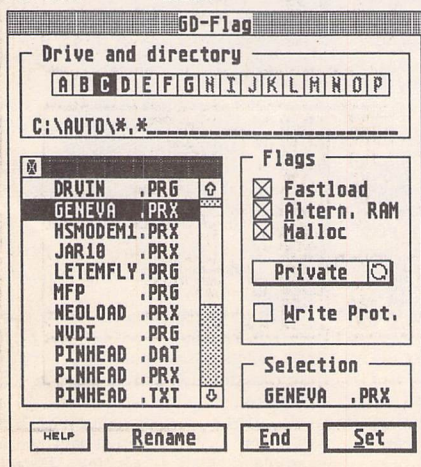
In addition to the excellent Shareware offerings many authors release useful utilities as Freeware. I've translated the documentation for a utility written by Gregor Duchalski. GD-Flag offers an easy way to check and set various flags in program headers. As you can see from the screenshot all the action takes place from an extended File Selector dialog screen. Simply select any program file and edit its header using the options provided.

GD-Flag supports all Atari TOS versions and resolutions including MultiTOS release 8.2 or later. The drag and drop feature of TOS desktops (V1.04 or later or most alternative desktops) is supported along with the option to call GD-Flag from a command line. The Rename button renames the file with an X as the final character in the file extender, ideal for disabling AUTO folder programs and desktop accessories. Order disk number UTI.323 from the ST Club.

As I've just become the father of a baby daughter, this month is the ideal time to hand over to Graeme Rutt who has organised and supports the GEMView registration scheme in the UK.

Current Versions

Kandinsky V1.57e
Winlupe V6.6
Selectric V1.10e



File	Work	Extra	Window
Load Image... ^O	Open Log-Window ^L	Globals... ^G	GEM-View:Log
Load Type... ^AO	Open Tool-Box ^OB	Preseting... ^F	
Save All Not Show	Cycle Window ^W	Saving Dflt... ^D	
Identify... ^I	Close Window ^U	Graphic mode... ^J	
Convert Image... ^N		Install path... ^Z	
Iconify... ^I	Resort Windows ^R	Alert Boxes ^AZ	
Open icon... ^O	Close Windows ^X	External ^E	
Clean up... ^C	Icon GEM-View ^C	Small Windows ^S	
	Open GEM-View ^A	Color Reset ^T	
Quit ^Q Break ^B	--- Configurations	Auto Iconify ^Y	
	Load ^Y Save	8pt ^ 9pt 10pt	

GEMView V3.01

As regular readers of this column already know, Joe Connor has recently been the man behind the UK registration schemes for several excellent products. The idea of making quality foreign shareware registration easily available to a UK audience was championed by Joe in the Atari section of CIX. I liked the idea, especially as it directly resulted in an English version of my favourite text editor, Everest.

Joe had already made it clear that everyone was welcome to participate so I decided to become directly involved - after all, the more products registered by UK users, the more English versions we're likely to get. I looked through my shareware collection and after producing a shortlist of programs which couldn't be registered in the UK and discussions with the author involved I eventually settled on GEMView, an image file viewer.

GEMView can load and save pictures in a vast number of formats, currently around thirty, ranging from the bulk standard IMG format to the popular GIF, JPEG and latest Photo-CD format. GEMView runs on all ST/TT/Falcon computers and uses various algorithms to display the image as faithfully as possible depending which computer, monitor and resolution you're using. Images may also be manipulated in a number of ways: magnification, brightness control, colour contrast, cropping, etc.

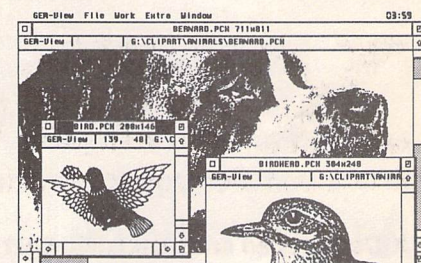
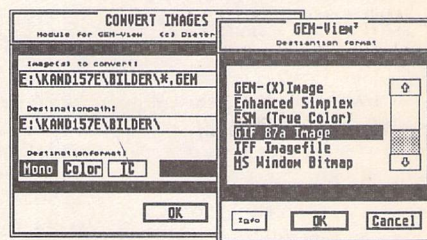
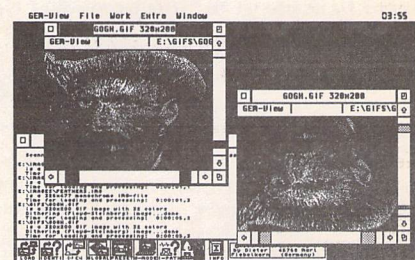
Version 3 has added the possibility for programmers to write modules to enable GEMView to do just about anything you can think of. Already a module to output images in colour on DeskJets has been made available.

The GEMView program itself can be run from the desktop or renamed with the .ACC extender and installed as a desktop accessory. The fully GEM'd interface is easy to learn and fully MultiTOS compatible. Additionally, GEMView can be run from a command line. Recently, using the command line, I converted 500 PCX files to monochrome IMG format and the whole operation took less than ten minutes after entering a couple of simple commands into the command line.

In this brief guest appearance it's difficult to express the power and functionality GEMView can provide. Happily, through the power of Shareware, you can try GEMView and make up your own mind before you buy. The latest version of GEMView is always available for download from the CIX-supported Shareware filelist.

Once you're satisfied GEMView is indispensable you're expected to register. After thirty days the program is designed to become less functional. To register your copy of GEMView, send a cheque for £18 to:

Graeme Rutt, 4 River Terrace, Washbank Road, Eynesbury, St. Neots, Cambs. PE19 2TE.



CAPTIONS

From top to bottom:

Fig 1: Using the built-in tools it's easy to manipulate images. In this example Van Gogh has been given a quick vertical flip.

Fig 2: If you have a folder full of one image type and you'd like them converted to a different format GEMView can perform the conversion using the 'Convert images' option from the file drop down menu. Set the current image type and pathnames in the first dialog followed by the target image type in the second dialog. Select OK twice and conversion will follow automatically.

Fig 3: Manage your clipart libraries.

Fig 4: The log window can be open or closed. When open it provides a quick method of selecting the most common commands without accessing the dropdown menus. Detailed information about each image is displayed as it is loaded or manipulated.

For Sale

Sequencer One Plus, latest v1.3, and sample series disk 2 (guitars and strings). All boxed c/w manuals. Gajits allow re-registration. Both together for £25. Tel. 0494 872449. (39)

TOS 2.06 and switcher £25, Seagate ST1096N 3.5" SCSI bare drive 84MB £110, ST1133N 127MB £140, Roland MT32 £90, Roland CP40 Pitch to Midi £90, Zydec external 3.5" drive £25, HP DeskJet 500 £160, Alfa Data optical mouse £10, Midgrid Professional TAC Dongle £125, Future Wars £5, Batteries included sound card £10, Overscan £20, Atari Robokit £10, 256K Simms £2.50 each. Bryan 0272 245935 (day) or 0272 401702 (evenings). (38)

Atari software clearout: Cadja CAD package, GFA Raytrace, STOS, The Pawn, Carrier Command, Falcon: absolute bargain, the lot for £50. All originals with disks and manuals. Tel. Cardiff 0222 624399. (38)

Protex v5.01 £25, Protex v5.53 £40, Taxan Supervision colour monitor £190, Star LC10 colour printer £95; all plus p&p. Tel. 081 553 3780. (40)

Calamus 1.09N £40; HiSoft Devpac2 £8. Call Andrew on 0788 811995. (38)

HP DeskJet 500 Inkjet printer, v.g.c. £140. Tel: 0737 813611 (day) or 0737 350784 (evenings). (38)

Classified Adverts

*Classified adverts are free to subscribers.
Please use the form on page 58.*

Deluxe Paint £20, Ballistix £10, Hyperpaint £10, Silhouette £15, First Word Plus £20, First Mail £10, Wishbone Ash "Raw to the Bone" CD £5, PR high quality Sharp HP400H stereo headphones £30. All boxed etc., or nearly mint (phones new). Call David on 0203 679965 (pm). (38)

Citizen 1200 9-pin dot matrix printer complete with parallel lead and mains lead, 2 ribbons also included. Good condition in original box, ideal first buy: £40. Tel: 0257 252875. (38)

Mega ST 4MB Ram fitted; 20MB Seagate hard disk with ICD Ad-Speed interface; EOS TOS operating system; Overscan fitted for extra screen area - all installed in Lighthouse Tower case; SM124

monitor; software loaded includes: First Word Plus v3.15, PageStream 2, Superbase Professional, K-Spread 4, Technobox CAD, Neodesk 3 and Harlekin 2. All original manuals etc. supplied. This is a thoroughly reliable system, so try an offer around £450. Also available: Spectre GCR Macintosh emulator inc. ROMs: £100; Turbo 16 v2.0 16MHz processor upgrade, unused: £70; AT-Speed PC emulator and Speed-Bridge for Mega ST fitting: £50. Everything must go so ring with your best (sensible) offers or for an appointment to view. Phone Nigel on 0372 274410 (Surrey). (38)

Atari ST computer £50; Philips CM33 colour monitor £100; 80Mb Supra drive £150; Supercharger PC

emulator + DOS £100. Microtext teletext adaptor £60; plus lots of serious software & books. No games. Phone Horsham (0403) 262472. (38)

Atari STFM 2.5MB £150, Progate 30 Hard drive £120, SM125 mono monitor £60, Forget-Me-Not clock £10, V21/23 modem £25, Rombo complete colour solution £50, STOS Maestro £20, Protex v6 (latest version) £60, plus many original software titles too many to list. Southampton (0703) 867640. (38)

STFM 2.5 Meg, 50 Meg hard drive, mono/colour monitors, hand scanner, second disk drive, monitor switch box; PageStream v2.1, Timeworks 2, That's Write v1.5, GFA Draft v3.0, Diamond Edge, XBoot, Master CAD, lots more. Games and PD disks. All must go. Offers to 0837 86435 evenings. (38)

Golden Image mouse, Zip-Stik joystick, Superbase Personal, Signum Script WP, Flight Sim. 2 + scenery disks, F19 Stealth Fighter, F15 Strike Eagle, Falcon + Missions, Airbus A320, Populous, Atari ST User and ST Format mags (+disks) in binders 1990-1993. Will split. Offers please: 081 673 0153. (38)

Infocom Adventure games software: Planetfall, Stationfall, Starcross, Infidel, Sorcerer, Ballyhoo, A Mind Forever Voyaging. All £6 inc. P&P. Tel: 031 445 1566. (38)

Atari STFM 1040 (boxed) £175.

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.

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.

Clip Art
Clip Art specifically for Christian and Community Magazines. Seven disks of IMG images for DTP pro-

grams 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.

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: Darren P. Goodwin, 4 Coniston Drive, Bolton on Dearne, Rotherham, S. Yorkshire S63 8NE.

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, Molar'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 Peckarman 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.

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, Dolly End, Hailley, Witney, Oxon, OX85XD.

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. For demo, just send 4 first class stamps OR s.a.e. + disk.

STTrack
Use up to four light beams with your ST. Measure speed and acceleration. Write data to disk for spreadsheet. Invaluable for science National Cur-

riculum 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.

Graph, Euclid and Stack
GRAPH can draw simple functions, implicit functions, parametric and polar functions and display the gradient functions of any of these. It will also display the solutions to first order differential equations and do a simple plot of complex functions. The zoom facility can also be used to find accurate solutions to equations. EUCLID enables you to draw any geometrical configuration including conics, circles, perpendiculars, bisectors, etc.

Both these programs can save, reload, and print the drawing made by them. STACK is an arithmetic calculator (Hewlett Packard type) for use with very large whole numbers. It will factorise smallish numbers (up to 15 figures) quite quickly. Cost: £10 for a disk containing the programs, documentation and some examples. Michael Girling, Camel

External floppy disk drive 83 tracks £25, GFA Draft 3.1 (manual & disks) £20. Flexi-Dump manuals and disks £15. Loads of others, magazines, PD disks and blank disks. No reasonable offer refused. Phone Stevenage (0438) 728124. (38)

Mark Williams C version 3 complete with source debugger etc. £30. FTL Modula 2 developer edition £25. Logistix Spreadsheet/graphics £25. K-Graph 3 £15. Personal Pascal £15. Monitor switch box £7. Tel Paul on 0772 797125. (38)

Tower system (separate keyboard) containing: 2.5MB STFM, TOS 1.4, 32MB hard drive, ICD host adaptor with on-board clock, two 1MB floppy drives, new colour monitor (approx. 20 hours' use), dot matrix printer, various business and games software, 100 PD disks (catalogued), computer workstation trolley. £450. Call Paul on 0308 424072 evenings. (38)

Low cost hardware and software with original manuals & packing! 1Mb STFM with SM124 monitor and second drive £150, Calamus 1.09 with extra fonts £50, Fleet Street Publisher version 3 £25, Didot Line Art with Bezier curve tracer £40, Convectron curve tracer £30. Near offers considered; please ask about other items. Tel: Watford (0923) 266636 evenings. (38)

Protar Host Adaptor (inc. DMA Cable to connect adaptor to ST & SCSI cable to connect hard drive to adaptor). In perfect condition with software. To make use of this you will need an SCSI Hard Drive and a power supply and possibly a fan - £40 (worth £100), I will pay postage. David Haider, 061-764-2442 between 4pm and 10pm. (38)

1MB STFM, Colour Monitor, 85MB Hard Disk, modem, 75+ magazines and over £1500 of software. Worth

over £2300 in total, sell for £950. Write to Peter Strath, 75 Cavendish Road, Highams Park, London E4 9NQ. (38)

68882-16 Coprocessor for Falcon, new £49, TOS 2.06 kit incl. Roms, requires soldering: £39; Books - Abacus ST Tricks & Tips £6, Compute's Tech Ref. Guide ST TOS £9, ZZSoft Intro. Machine Code (incl. disk) £10, Glentop using ST Basic £1. Phone 0224 86 9558 after 6.00pm or weekends. (38)

Atari ST User magazines, May 87-Aug 91. 50p each + p & P. Tel (0827) 330427. (40)

Contacts

Falcon contacts wanted! Do you own one of these fantastic machines? If so, let me know. Write to: Frank Myrland, 3853 Vraadal, Norway. (40)

Wanted

At Once 386sx PC emulator for Mega STE. Colour graphics card for the VME bus also wanted. Tel: 0483 233419, ask for Toralf. (39)

A4 or flatbed scanner and suitable software for use on Mega STE 4, preferably 600dpi but anything considered. Cash waiting. Tel: Steve (0276) 21469 at 67 The Avenue, Camberley, Surrey GU15 3NF. (40)

Copy of Magnetic Scrolls' Alice in Wonderland and Chameleon desk accessory. Dave on 0446 795266. (38)

Calligrapher Professional (not Gold). Please phone Steve Hill on 0732 456537 with details of printer drivers and price required.

FM Melody Maker, any reasonable price paid. Contact Graham Nash on 071 234 5098 - 9am-6pm. (38)

Atari Editor/librarian for Crumar/

Chase Bit 01, or MIDI SysEx in order that I can make one. Will buy or swap. Please write to J. Gouveia, Rua Marques de Pombal 20, Alvor, 8500 Portimão, Portugal. (38)

General

Calamus 1.09N/S (please include fonts) and That's Write/Write On files printed on HP LaserJet 4L for 25p (incl. p&p) per A4 side. State single/double-sided. Send disk, cheque/p.o. and contact no. to: K. Hornby, 33 Ingleton Drive, Lancaster LA1 4RA. (40)

I am deserting the Atari for the PC so I have loads of stuff to get rid of, willing to exchange for anything for the PC. 0983 615987 or 30 The Mall, Binstead, I.O.W. PO33 3SF. Wanted 3 1/2" Disks. (38)

Calamus 1.09 and S files printed on Laserjet 4; 300dpi at 20p per sheet; 600dpi at 30p per sheet. Send disk with fonts used, and a stamped addressed A4 envelope. Also very cheap litho printing A4/A5/business cards etc. SAE for price list & samples. Cheques to G. Franklin + S Russell, 67 The Avenue, Camberley, Surrey, GU15 3NF. (38)

Call the Fractal BBS. Loads of features and very friendly. 2400BPS after 9pm on 0305 266304.

The Bird Brain BBS - 0305 860245 10pm - 10am every night, all welcome. (43)

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)

Membership of the Cheshunt Computer Club is the essential accessory for your Atari. If you live within reach of Herts then give me, Deryck Croker, a ring on 0923 673719 with your name and address and

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-related fidonet and Nest Echoes, and importing international ST file echoes (AFN/ADN). High speed and technically aware callers are especially welcome! (R)

Crystal Tower BBS 081-447-8244 24hrs 300-2400 Baud (Townernet 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)

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.

'Alternatives' fanzine - Quarterly. £1 per issue. Issue 9 out now (Autumn), Issue 10 out soon. Send £1 (which includes p+p) and address to Alternatives, 39 Balfour Court, Station Road, Harpenden, Herts. AL5 4XT. Writers, visionaries, artists needed. Details to the above address.

Quarry House, Wadebridge, Cornwall PL27 7HZ.

DEGASART v2.0

Demo disk of the above compart tutorial is now available. Please send a cheque/P.O. for £1 or a blank DS disk and an SAE to Keith Markland, 15 Stourton Road, Ilkley, W. Yorkshire LS29 9BG.

Morse/RTTY Transceiver

Atari STE - Morse and RTTY transceiver. Morse automatically locks to signal including hand sent code and will send at 10, 20 and 40 wpm. Noise filter option. Adjustable mark-space ratio. RTTY automatically locks to incoming signal up to 100 bands and will send at 50 and 25 bands. Both programmes have split screen type ahead buffers and are extremely easy to use: just fire up and you live. These programmes are £5 each. Write: Mr. V. McClure, 43 Roman Way, Seaton, Devon EX12 2NT.

CASIO FZ Sample Editor

Runs on any ST(E) with mono monitor/emulator. Visual editing with cut and paste, Time stretch/shrink.

Resampling, Optimising etc. £30 including printed manual postage and packing from: A. Graves, 81A Cambridge Road, Girton, Cambridge CB3 0PN.

MultiCAD

Vector-driven CAD/DTP program for the ST/STE. Design any kind of engineering drawing/posters/flyers/handbills/business cards/pattern design. Create your own library using the block save facility. Printout on Epson compatible printer 9- or 24-pin. Hi-res mono only. Large and enhanced screens supported. Excellent user support. Features include block cut/copy/paste/rotate/flip/scale, powerful auto repeat primitives and block paste, vector and bit-image text, units in mm/cm/mtr/Km/ins/ft/yds/pixels and user defined, snap-to-grid and snap-to-line, sixteen levels of drawing, landscape and portrait. Send cheque/P.O. for £24.95 payable to J.H. Taylor at: 12 West Drive, Cleadon, Sunderland, Tyne & Wear SR6 7SJ.

SciSet

is now available for

Calamus

SciSet has been completely redrawn and now consists of 20 typefaces: serif, sans serif, italic, oblique, Greek, Greek italic and science symbols, all in three weights - light, medium and bold. The letterforms have been designed to be resistant to variations in the printing technology.

Price of the set: £75

Dr Graham McMaster,
Retsum Computing Solutions, 12 High Street,
Turriff, Aberdeenshire, AB53 7DS. (0888 62328)

Subscriber Specials

Calamus and Outline Art

Save
££'s

For one month only, we are offering these great deals on the DMC range of publishing tools:

<i>Calamus 1.09N</i>	£ 75.00	(RRP £89)
<i>Calamus S v2</i>	£245.00	(RRP £299)
<i>Calamus SL</i>	£435.00	(RRP £499)
<i>Outline Art v3</i>	£179.00	(RRP £199)

These are all genuine UK versions and prices include both VAT and delivery. Orders must be received by February 28th to qualify for these prices as this offer cannot be repeated.

All these offers must expire on 28th February 1994
Look out for more Subscriber Specials in issue 39

Ecojet Inkjet Refills

- ✓ Cannon and Hewlett Packard Compatible.
- ✓ Quick and Easy to use.
- ✓ Environmentally friendly.
- ✓ Syringes may be washed out and re-used with your own inks!
- ✓ Each kit includes two syringes, each holding enough ink for at least two refills.
- ✓ Fullmark are long time suppliers of quality printer consumables.
- ✓ Comprehensive operating instructions supplied.

		Price	RRP
Canon BJ10E/200	(2 x 20ml refills)	£10.50	£13.99
Canon BJ300/330	(2 x 40ml refills)	£12.50	£14.99
HP DeskJet 51608A	(2 x 20ml refills)	£10.00	£13.99
HP DeskJet 51626A	(2 x 40ml refills)	£12.50	£19.99

HP Deskjet refills are suitable for use with all DeskJet models; the 51608A refill should only be used to refill HP single capacity cartridges and the 51626A refill should only be used with the double capacity cartridge.

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West Bridgford
Nottingham
NG2 7PP

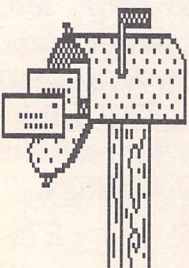
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Warning: It is illegal to sell unauthorised copies of commercial software - All software offered for sale must be in the original packaging with manuals etc. Anyone found to be selling pirated software through the classified advert listings will be reported to the appropriate authorities. Software publishers do not normally offer user support or upgrades to users of software purchased second hand.

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Use this space for any feedback you'd like us to read.

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AP.250	Label Makers
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AP.310	Chemistry and Electricity
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AP.350	Genealogy and Mag
AP.360	Word Puzzle Makers
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AP.400	Demo's
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WARP 9

Speeds up text and graphics screen redraws.

Faster than Quick ST II or Turbo ST 1.84.

Even speeds up machines with a blitter chip.

Requires no hardware modifications.

Compatible with most graphics cards.

Includes MonSTER for emulating screens up to 1280 by 960.

Supports all standard ST and TT graphics modes.

Compatible with 68000 and 68030 accelerator boards.

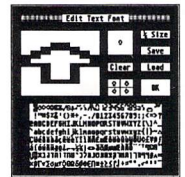
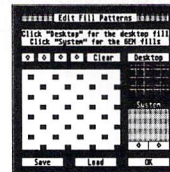
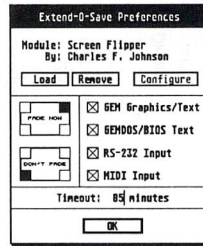
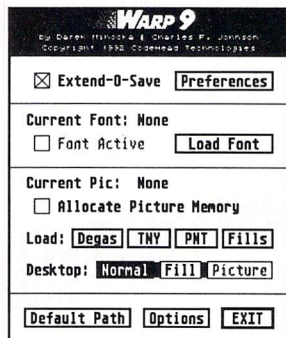
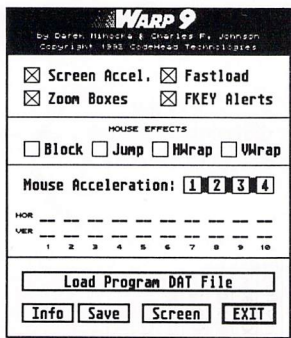
Installs custom screen fonts and desktop picture or patten.

Font and pattern editors included.

Built in mouse accelerator with mouse effects such as block, jump, and wrap, and a customizable mouse accelerator.

Compatible with Quick ST3 problem-programs like That's

Write and Calligrapher.



Boot up with Warp 9, and you'll never want to be without it again. Warp 9 increases the speed of screen output dramatically - windows snap open, graphics appear instantly, and text *flies* onto the screen.

How is this possible? Most GEM programs display graphics and text by calling standard routines built in to TOS. Warp 9 intercepts and handles these calls with optimized assembly language code that is *much* faster than the built in routines. Graphics and text still look the same, but appear with astonishing speed!

Warp 9 also includes a unique configurable mouse accelerator, desktop pictures, custom screen fonts and fills (72 screen fonts are supplied), and function key control of alert boxes with the F1, F2 and F3 keys. The Warp 9 Customizer lets you create your own fonts and fill patterns. And best of all, Warp 9 is compatible with all the programs you run.

Price: £29.95

New features in version 3.8 include Falcon030, Geneva and SpeedoGDOS compatibility, a new control panel, plus 18 great new Extend-O-Save screen saver modules. Upgrades from earlier version of Warp 9: master disk + £16.95

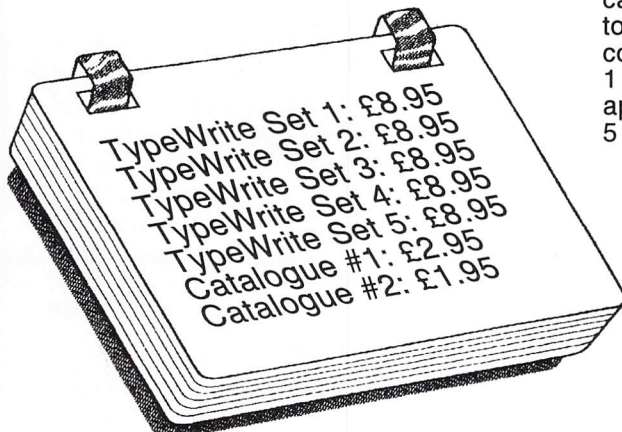
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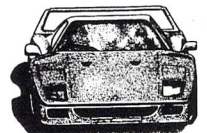
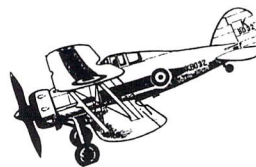


TypeWrite Clip Art

This is a series of high quality 300-dpi clip art professionally produced by the TypeWrite DTP bureau. Each set contains 100 IMG files on four double sided disks. The associated catalogues shows all of the images, printed full size, together with the file name and disk number. (Catalogue #1 covers sets 1 to 3, Catalogue #2 covers sets 4 and 5.) Sets 1 to 3 are general mixed subjects of use in most DTP applications. Set 4 is full of picture of dogs, and set number 5 contains pictures of planes and cars.



A5 binder to hold clip art pages: £2.25



FAST Club

For users of Atari ST & Falcon computers

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- 20 x 3.5" DSDD disks £5.95
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- Fontpac+ Newsletter Set £14.95
Complete set of fonts suitable for use with Timeworks Publisher or any other program that uses GEM bit-mapped fonts. Ideal for newsletters, magazines, reports, and booklets. Requires high-res monitor and 300-dpi printer.

Fonts to go

- Textstyle - launch price £14.95
Another cracking program from Jeremy Hughes, author of Imagecopy. Enter your text into Textstyle, select a Calamus or GEM font, add text effects and justification, and the resulting picture file can be imported into a whole range of packages. Great for generating headlines for wordprocessors like First Word Plus, Redacteur or Write ON; or use it with an art package such as PixArt to make posters, banners, greetings cards, etc. Thousands of applications. RRP - £19.95
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Disks cost £1.25ea; or just £1 for subscribers!
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- Imagecopy 2 £19.95
There is no better way to grab, view, convert and print images on your ST or Falcon. Supports 9-pin and 24-pin Epson compatibles, Cannon BJ, HP Desk/Laserjet mono and colour printers.

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Hidden away in an office in Denmark we have unearthed what must be the last stocks of this classic ST book. If you feel as if your computer knows more about computing than you do, then you need this book! A brilliant introductory text for beginners or anyone new to Atari computers. This is the authorised printed version of Y2M: beware of imitations!


Great fonts


- Calamus Font Set £8.50
10 DS disks of PD and Shareware fonts in a box.
- PageStream Font Set £8.50
10 DS disks of PD and Shareware fonts - includes four disks of PostScript fonts.
- STC Fonts Catalogue £2.95
Catalogue and printouts of the fonts in our professional quality range of Calamus fonts.

Omikron

We are the UK distributor for this famous German software publisher. Our release schedule for the English versions of their ST and Falcon software:

- PixArt £34.95

Feature packed true colour pixel painting program. PixArt is very quick, supports digitizers and graphic tablets, supports all ST-TT and Falcon screen resolutions (monochrome to 16.7 Million colours) and runs on all fully GEM-compatible graphics cards.
- Other highlights: you can zoom in or out of the picture and still use all the drawing tools. PixArt has very creative block manipulation facilities that will be of great use to DTP users. PixArt is fully Falcon compatible. *Wonderful, wonderful!* is how the German Atari magazine TOS summed up its feelings about PixArt! Available: Now.

- Freeway £1ba

A new generation database that combines free-form text database structures with traditional field structures. Accessible internal SQL-structure and fully Falcon compatible. Available: February

- Mortimer £14.95

Memory resident multi-function utility that can be called up from within any GEM or TOS application. Features include: text editor, printer spooler, keyboard macros, virus guard, flexible RAM disk, screen grabber, disk utilities such as file copying and disk formatting, and a pop-up pocket calculator. Available: Now

- Mortimer DeLuxe £34.95
Even more features: ten text editors, file search, disk copier, better file selector, time scheduler with alarm, and more... Fully compatible with ST, TT and Falcon computers. Available: February

ST Applications

For the last three years we have been publishing a monthly magazine for ST users. Full of informative and authoritative articles ST Applications is an essential read for all Atari users who are serious about getting the best out of their machine.

Don't take our word for it, here are some unsolicited comments from happy readers:
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really excellent value GFS
invaluable service for ST users PS
consistently impressed AS
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