Price: £1.50

ST APPLICATIONS

The Magazine for Users of Atari ST, TT and Stacey Computers — *Issue No. 3 February 1991*

THIS MONTH

REVIEWS

- Write ON
- Word Flair
- Edscheme
- Molgraph

ARTICLES

- SLM804 Interface
- HiSoft WERCS
- Atari Laser Software
- On-line with CIX
- Dan Wilga Interview

REGULARS

- News
- Forum
- Adventure Column
- CAD Column
- STicks & STones
- Programmers' Forum

Plus

PD Update

featuring Budgie U.K. latest releases and ST Club Disk Mag 21

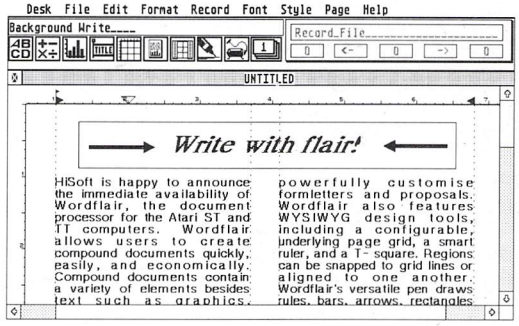
Molgraph

An in-depth review of the current version of this "Lego set for Chemists" also affords a glimpse of the features to be implemented in Version 2, due later this year.

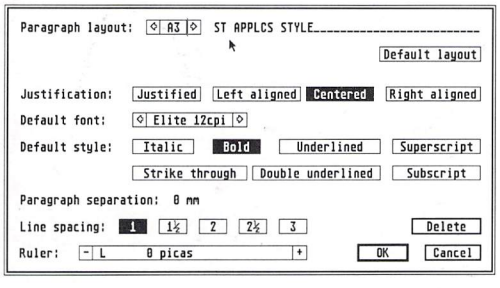
Living with the Atari Laser

Two articles deal with software and hardware add-ons for Atari's laser printer, both aimed at easing the burden of running the beast.

Word Flair



Two new word processors are reviewed, both offering DTP-style facilities with GEM fonts and sophisticated page layout.

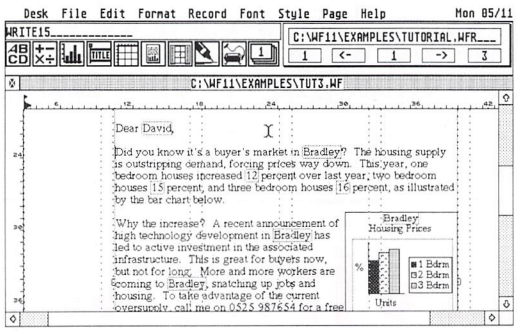


Write ON!

HiSoft News

All the latest news and product information.

Write with Flair



We are pleased to announce the immediate availability of the UK version of Wordflair, the integrated document processor.

With its powerful combination of text, graphics and calculation regions together with its integrated database, Wordflair is ideal for newsletters, product brochures, form letters, mail shots etc.

Wordflair provides all of the features you need for efficient word processing ... and much more. Wordflair lets you combine text, graphics, and images, with its easy-to-use page layout tools. in addition, you can dynamically link calculations and data throughout your document.

With Wordflair, you can create effective, eye~catching documents without having to move from program to program.

Wordflair creates compound documents by layering text, graph. calculation and imported object regions onto a background writing tablet.

These regions are simple to create and edit, using the friendly, easy-to-understand icons along the top of the Wordflair window.

HiSoft is the exclusive distributor of the UK version of Wordflair which has full support for the UK keyboards, currency etc. and comes with a complete set of anglicised examples for you to use and study. The RRP of Wordflair is £79.95 inclusive.

HighSpeed Pascal

We have recently discovered a brand-new, and rather exciting, version of Pascal for the Atari ST/TT.

HighSpeed Pascal comes from Denmark, is extremely fast and friendly to use and is very closely compatible to the immensely popular Turbo Pascal on the PC.

ProFlight Takes Off

At long last, ProFlight, our Tornado flight simulator, has made it down the runway and out of the office. Already we have had many enthusiastic comments from ecstatic users and

ProFlight seems set to create a new standard of accuracy and flyability in the simulator market. RRP £39.95.

Compilation speed is roughly 20,000 lines per minute with excellent code generation for the ST and the new TT.

HiSoft has been appointed the exclusive distributor of HighSpeed Pascal in the UK, USA, France, Australia and New Zealand. RRP £89.95.

HiSoft software is available from good computer shops. In case of difficulty, you can order directly from HiSoft. For export terms or further details on any of our products, please call or write to us. All prices include VAT and P&P within the UK.

Use this order form to obtain your HiSoft Software directly from HiSoft and we will send you a Starter Pack consisting of a quality mouse mat (printed with the ST ASCII set), an attractive disk wallet and 4 double-sided disks, totally free of charge!

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❑	HighSpeed Pascal	£89.95
❑	Lattice C Version 5	£149.00
❑	HiSoft DevpacST 2	£49.95
❑	HiSoft C Interpreter	£49.95
❑	FTL Modula-2 Developer	£89.95
❑	Power BASIC 1.3	£49.95
❑	Harlekin	£49.95
❑	TurboST 1.83	£34.95
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❑	HiSoft WERCS	£29.95
❑	Tempus 2	£39.95
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Name: Date:

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High Quality Software

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Bedford MK45 5DE UK.
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CONTENTS

Regulars

News 4
STicks and STones 28
PD Update 29
Jeremiah's Journal 42
Forum 44
Programmers' Forum 49
CAD Column 53
Classified Adverts 54
Subscriptions & Back Issues 56
Order Form 57

Articles

Computer Shopper Show 6
Long Day's Journey into Print 20
Working in Tandem 22
LaserFace 24
On-Line Conferencing (CIX) 33
Racing Spreadsheets 36
Dan Wilga Interview 38
Giving it the WERCS 40

Reviews

Wordflair 8
Molgraph 12
Write ON 14
EdScheme 18

Read_Me 1st

Subscription Expired? Check your address label to see when your subscription expires: the first number above your name is the issue of the old ST Club Newsletter that your subscription would have expired with, the second number is the issue of ST Applications that your subscription will expire with, and the third number is the number of the disk mag that your Disk Mag subscription will expire with. If the information line on your address label reads STA3, then you must take out a new subscription in order to receive future 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 0602-410241 for further details and to request a media-pack. Subscribers can place free classified advertisements - see page 57 for details.

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Air Mail Worldwide:
12-issues : £28.00
12-issues plus 6 Disk-Mags : £34.50

Subscription and Order form will be found on page 57.

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. Disk-Mag subscribers will have Disk-Mag DMG.22 mailed to them at the same time as ST Applications issue 4.

Your Guarantee

If at any time you wish to cancel your subscription to ST Applications you may do so simply by informing us in writing. The full unused balance of your subscription will be refunded by return of post.

CREDITS

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Contributions

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

NEWS IN BRIEF

Replay 8

Microdeal have launched yet another upgrade to their highly successful sound sampling package, Replay. Although the hardware is still the same as version 4, the software is now up to version 8; or Replay VIII, as Microdeal prefer to call it! The full hardware and software package now costs £79.95, and existing users can upgrade their software to version eight for £12. Further details from Microdeal on 07269-68020.

Leonardo Art

German publisher Data Becker have launched a monochrome drawing package, Leonardo ST. It supports GEM metafiles and PostScript, as well as offering up to 250 drawing levels and a host of drawing tools and facilities. Unlike some other mono drawing packages aimed at the same market sector, the price is a reasonable £40. Contact Data Becker on 010 49 211 31001.

GFA News

The GFA Basic and Assembler User Book is available now at £19.95 from GFA Data Media (0734-794941). It comes with a disk that includes all of the tutorial material given in the book. GFA Data Media are now the official UK importer and distributor for French publisher Digigram's range of music products. Now available in the UK are: Track 24 (£75), Studio 24 (£150), Big Band (£159), Big Band Plus (£249) and Proscore (£199).

Cardfile

Version 1.4 of this versatile database now comes as both a program and an accessory. The impressive looking feature list includes: up to 14 fields per card, a simple but powerful 'filtering' capability, printing of filtered address books and phone lists, automatic addressing of envelopes and printing of custom label sheets for mass mailings, export of addresses into a word processor file, an appointment diary with options to print a daily agenda, an appointment reminder, phone auto-dialer, and the ability to export spreadsheet and mail-merge compatible data files. Cardfile 1.4 costs US$34.95 plus shipping, comes with an illustrated manual, works on any ST, and is available from: GT Software, 12114 Kirton Avenue, Cleveland, OH 44135-3612, USA. Phone/FAX: U.S.A. (216) 252-8255

Dungeon Book

For lots of ST and Amiga hints and tips, hardware specs, memory maps, DIY Ram upgrades, a DIY 32,768-colour board and much more, take a look at the latest (£11.99) book from Dungeon Mail Order on 051-428-2280.

FoReM BBS Software

The ever popular FoReM BBS software by Matthew Singer is now being marketed by the Full Moon BBS in the USA. It is available in single line versions for both the ST and the IBM PC, and may be purchased directly from Full Moon for $74.95 plus shipping. When used in conjunction with the FNET mailer program by David Chiquelin (a shareware program supported at the 'Atari-Oh!' BBS (713) 480-9310) either version of FoReM can be used to exchange messages with other BBS Systems worldwide. Contact Stephen Rider, 20 Cargill Ave, Worcester MA 01610, USA. The Full Moon BBS is on (508) 752-1348.

Construction Estimator 2.0

This easy-to-use package will generate estimates, including quantity and cost totals for materials and tasks, for many types of building work, such as houses, driveways, and small buildings. Data may be exported into an ASCII file, or LDW Power compatible spreadsheet files so that you can use a spreadsheet to further modify your estimate. Construction Estimator costs $39.95 from Michael O'Massey, 9910 U.S. 395 North Reno Nevada 89506 USA; (702) 972-3659.

Lattice C Re-vamped

Lattice Cv5, HiSoft's highly acclaimed ANSI C Development System, has recently undergone a lengthy overhaul, and has now reached version 5.06.02. The sizeable jump in version numbers refers not so much to the amount of new features in the latest release but more to the substantial number of bugs that have been fixed. Nevertheless, established users will welcome the many alterations and additions made by the Bedfordshire company.

The most fundamental change involves compiler performance and code generation - previously, very average compilation times were perhaps one of the system's few notable weak spots, but the new compiler has been fine tuned and now boasts a far greater turn of speed (somewhere in the region of 35%), whilst still managing to improve upon the already excellent code generation algorithms.

Support now exists for using the -L option in the LC_OPT (compiler options) variable. This enables additional libraries to be specified simply in the integrated compiler environment. Users of the HiSoft C Interpreter may simply specify -L+hc.lib to use the HiSoft C library, without having to get involved in cryptic "WITH" linker control files.

Other improvements and modifications include:

* Fixes to the inevitable series of bugs in such a complex new product, too numerous to list...
* Minor changes to the multi-window editor, now up to v1.10, including a cycle window command.
* Devpac ST 2 style INCBIN directives for the 680x0 macro assembler.
* Left mouse button now doubles as a keypress during "Press A Key" prompts.
* Several header files have been corrected to comply fully with the ANSI standard.

This latest release is an altogether more stable and polished product, deserving a place in any affluent C Programmers' disk box. To upgrade, return your master disks to HiSoft together with a handling charge of £5, unless you have fallen foul of a compiler bug, in which case HiSoft will waive the handling charge.

Also new from HiSoft is "CodeProbe", a Symbolic Debugger for use with the Lattice C5 system, priced at £39.95. Also new is HiSoft Basic v2.0, which is the convergance of the original HiSoft Basic and Power Basic compilers - these will now slip into retirement. The new compiler includes the HiSoft multi window editor (as supplied with Lattice Cv5), as well as additional libraries of GEM and STE specific functions. Code performance has also been slightly improved. HiSoft Basic 2.0 will sell for £69.95.

For further details, contact HiSoft on (0525) 718 181; or write to: HiSoft, The Old School, Greenfield, Bedford, MK45 5DE.

Michael A. Baxter

PCG Font Designer Upgrade

The new version of the PCG Font Designer suite of font tools now supports most of the outline font formats supported on the ST; these include: PostScript Type 1 and 3 fonts, PageStream DMF fonts, CFN Calamus fonts, and ECF - Font Designer's own unique font format.

The Font Designer program is now up to version 1.1 and allows IMG graphic files to be loaded so that complex graphics can be traced easily. Additional improvements have been made to the PostScript drivers, and the Encapsulated PostScript (EPS) files produced with Font Designer can be used with Fleet Street Publisher 3. Users of bit-mapped fonts, such as GDOS and Signum fonts, can use Font Designer in conjunction with Fontkit Plus to generate bit-mapped fonts from outline fonts by exploiting the ability of Fontkit Plus to convert Calamus outline fonts into a variety of bit-mapped formats. Contact PCG on 0229-836957 for full specification and price details.

Alternative Keyboards

ST users looking for something better than the standard ST keyboard without the expense of a Mega ST, can now chose from two alternative US products that allow IBM AT compatible keyboards to be used with an ST.

Keyboard X-tender

The KX keyboard interface allows you to hook up an IBM AT style keyboard very easily. No internal wiring, no soldering, no unscrewing; just plug the supplied cable into your Midi-In connector and an AT keyboard into the KX connector.

The KX allows you to keep any existing MIDI setup by supplying a MIDI IN connector as part of its interface. KX comes with its own power supply and measures just 5" x 4" x 1.5". The supplied software allows the software drivers to be installed and removed with a desktop accessory.

KX retails at $74.95 in the USA and is available from:

Diverse Data Products
P O Box 695324
Miami
FL 33269
USA
Tel: (305) 651-2393.

Z-Keys

Zubair, well known for their memory upgrade systems for the ST, have introduced Z-KEYS, an IBM PC/AT keyboard interface for both the ST and Mega ST computers. It is a solderless internal device that installs easily and comes with a software driver for the new keyboard. The original ST keyboard can still be used.

Z-Keys costs $99.95 from

Zubair Interfaces Inc.
5243-B Paramount Blvd.
Lakewood
CA 90712, USA.
Tel: (213) 408-6715.

(This should soon be available in the UK from Third Coast Technologies.)

Desktop Publishing Update

Fleet Street Publisher 3

Contrary to our recent speculation, Mirrorsoft have **not** sold Fleet Street Publisher 3 to Midscape. However, rumour has it that Mirrorsoft are still trying to sell the rights to FSP3 - for £60,000. Enquiries to Mirrorsoft about the future of FSP3 have been met with unnerving silence, as have our request for technical support and details of progress in resolving the bugs in the FSP3 PostScript printer driver. Customers who have elicited a response have been informed that the long-awaited UltraScript fonts will be ready for release early in 1991.

PageStream

In the past couple of months SoftLogik have shown a renewed determination to get things right. They attended the 16-Bit Show in January, as SoftLogik Publishing Ltd, where PageStream was officially launched in the UK. It seems that SoftLogik products and technical support will be available from SDL. As PageStream 2 has yet to be released, version 1.82 will be the first official UK version, and it should be selling at £149.

The Amiga version of PageStream 2 is already available and has been well received. The new version supports Agfa Compugraphic hinted outline fonts and Adobe Type 1 IBM format fonts. Font size support has been extended down to six points and up to 600 points and, as a result, it now includes some support for Bezier curves. PageStream 2 sells for $299 in the US, and so should have a UK price of under £250.

PageStream Politics

There can be few other ST products that have been through so much turmoil. PageStream has already turned up in the UK under two different names: Publishing Partner Master and Proxima.

Publishing Partner Master appeared to be a re-named PageStream 1.80, which the French SoftLogik distributor took around to various UK software houses in the hope of finding a distributor. PPM seems to have quietly faded away: there were no takers.

Proxima is sold by Network News Services (NNS) who took on an early version of PageStream, 'improved its performance', and re-named it Proxima, believing that the name PageStream was by now too tarnished. NNS claim this was all done with the approval of SoftLogik, have offered to show us copies of the relevant agreements, and say that they pay SoftLogik the US trade price for each copy of Proxima they sell.

NNS have refused to supply Interactive Publishing with a review copy of Proxima, and ST World cast suspicion on the legal status of Proxima; ST Format reviewed Proxima, and reviewer Neil Jackson gave it a rating of 96%.

The January '91 issue of ST User weighed in with its contribution, a highly critical attack on NNS and Proxima. The ST User attack was odd: it claimed that Proxima couldn't support outline fonts. In fact, *every* incarnation of PageStream has supported outline fonts!

SoftLogik seem to be trying to distance themselves from the activities of NNS, and NNS are working on a DTP package of their own, Proxima 2. This is to be offered as a free upgrade to all Proxima users.

Kuma Clip Art

Kuma have launched a range of clip art libraries for use with ST wordprocessors and DTP packages. The files are supplied in both IMG and MAC format, along with a program to convert the files into other popular ST file formats such as Degas and Neochrome. The first thirteen libraries cover:

* Transport
* Birds & Animals
* Trees & Plants
* Business Graphics
* Food & Beverages
* People
* Occupations
* Caricatures
* Special Occasions
* Signs & Symbols
* Sport & Recreation
* Education
* Borders.

The libraries are available at a cost of £29.95 each; and a fully illustrated 60-page catalogue with a sample disk is available for just £3.50.

John Russell Innovations

STE-compatible colour capabilities are now possible for all ST's thanks to the latest innovation from JRI in the USA. Their (US$50) 4096 Colour Board fits all ST's and extends the range of colours available in Low Resolution to 4096.

JRI are offering a new variation on an older product; their JATO CPU accelerator is now available without the accelerator but with a maths co-processor. It should significantly speed up rendering and spreadsheet re-calculation, with speed benefits in other processes as well. The tiny $200 device just presses onto the CPU in any ST or MEGA computer.

John Russell Innovations
Box 5277
Pittsburg
California 94565
USA
Tel: (415) 458-9577

Computer Shopper Show 1990

As the annual scramble moves to a bigger venue, Peter Crush joins the crush, ST applications are tracked down, and inside info and gossip are gathered.

The 1990 Computer Shopper Show was at Wembley Exhibition Centre in West London, spanning four days between Thursday December 6th and Sunday the 9th. This particular show has a reputation for being a good opportunity for making those pre-Christmas purchases, and there was certainly no shortage of bargains and deals to be had. Whilst the Show catered for owners of all types of computers, there was a lot of interest for ST users; in fact, I overheard one chap complaining to his companion: "It's all bloody Atari stuff wherever you look!" The previous show was held at Alexandra Palace, which could not cope with the huge numbers attending, but there was more room this time at Wembley. Even so, it was pretty busy on the opening day, and lots of school kids must have been playing hookey judging by the hundreds of unstubbled faces there.

Bargain hunting

If you were after hardware, and lots of people were, you could have picked up a new Phillips CM8833 MK II monitor for just £199! The best value at the show must have been the Golden Image scanners at £85 - until the stand selling them realised the mistake on their printed posters and quickly amended them to £149! Blank disks have really become very cheap to buy, even the brand name varieties, and software was available at "Show Prices": e.g. NeoDesk 2 at around the £30 mark. So it was a good place to stock up with all the bits and pieces, consumables, etc., you needed, or to get a good price on major items such as memory upgrades or disk drives. You could more than save your entrance fee, as well as being able to compare many products in the flesh before you parted with the readies. A Show true to its name!

No Games, please, we're Serious

For the enthusiasts wanting to see the latest applications being demonstrated there might have been a little disappointment, as only a small group of the "serious" software houses were exhibiting and even some of these had not bothered to set up ST's to run their wares! HiSoft had a TT showing ProFlight, their new £39.95 Tornado flight simulator. We joked about whether mention of it might be banned within these pages, or whether ProFlight could be deemed an educational program in view of its being a cheaper and safer way to learn to fly. In any event, it comes with a 150-page manual, runs on any ST/TT in colour or mono, and looks pretty impressive. Wordflair, a document processor which has the built-in capabilities to do calculations, produce charts and use a simple database, was also on show, and this also runs on the ST/TT family, although 1MB of memory and two floppy disk drives (or one floppy and a hard disk) are the minimum system requirements.

Less Serious STuff

GST Software Products were concentrating on demonstrating Timeworks for the PC range, although I gather there may be a long overdue update for the ST version in the pipeline. New for the ST was 1st Word Plus v3.20 at £79.95, which will now run on the TT as well. Considering there are no TT's around, it is getting excellent support! There are no major new features in this version, but you can turn the flashing cursor off if you want. Upgrades are available at very reasonable prices for owners of the previous releases. Copies of Issue 1 of ST Applications were left on this Stand as an advertisement for the capabilities of Timeworks in the right hands.

Heavy Reading

GFA Data Media had hoped to launch their new £49.95 GFA Assembler ST at the Show, which should be available by the time you read this, but the 366-page User Book and accompanying tutorial disk were on sale there. The translations of the German book into English must have kept fellow contributor Günter busy for a good few evenings! GFA Basic, a very popular programming medium, is now also available for the PC range of computers, but at prices way above the low ST ones we have come to know and love! The new commands in the PC versions will soon be implemented for the ST in GFA Basic v.4.

No Seymour or Clegg, but...

...Compo Software, run by ex-GST man Neil O'Nions, had two new word processors on offer: Write On at under £50 and That's Write at just under £100. These combine the paragraph style approach of DTP programs with WP, and both support up to twenty different fonts in one document. GEM fonts are loaded in as required during the use of the programs without the trauma of having to understand GDOS, and 1st Word/Plus files can be loaded in to be worked on. As well as software, hardware in the shape of the "PC Speed" emulator was on sale for under its new R.R.P. of £99, remarkable for a product costing nearly £400 just a few months ago. AT Speed offers extra speed and additional screen emulation modes, and costs £199, or £129 if your PC Speed is "traded in" against it.

Golden Fleece

Hot on the heels of a "Format Gold" award in ST Format's Issue 18, Golden Image had hiked up the price of their hand scanner by over £100. If this sticks, it will not be the bargain it was! Ab Pandaal, boss of Pandaal Marketing, was put out by the unfavourable comparison between his Daatascan Professional scanner and the Golden Image scanner. I can see his point: on a straight hardware to hardware comparison, his machine wins. Its handling is more "ergonomic", the larger rollers give smoother scan movement, and it just has the edge on the quality of image produced on printout. Only the inclusion of Touch-Up gives Golden Image its slightly unfair advantage! The ubiquitous Golden Image mice were to be seen in their various guises on many a stand: I swear the different brand names are all made in the same Far East factory. But these new, low-profile beasties are certainly more comfortable to use than the Atari rodent.

Public Domain

At such a "people power" show, it was fitting that the PD Services did so well. This really was a healthy scene. There

were at least four ST PD Libraries exhibiting, and they had crowds around them all day. Let's face it, they offer a great service, and what can you buy for around two or three quid elsewhere? Of special note was The South West Software Library, whose beautifully printed new Catalogue is packed with good stuff and was being given away free. It's funny how people in the main don't bother copying PD disks for friends, although this is quite legal, everyone being happy to buy their own copies from the PD service, and yet they do the naughty thing with commercial software. Lots of people asked me why The ST Club was not at the Show, especially with the launch of this new magazine. (Blame ST Applications! - Ed.) I had a backpack full of them to distribute and felt a bit like a missionary spreading the word as I strolled from stand to stand!

Publishing Future, Publishing Past

In fact, ST Applications Issue 1 had a unanimously warm welcome from all the Atari exhibitors at the Show, even at The Future Publishing Stand where vast quantities of the Christmas Issue ST Format were being sold to the punters. Sadly, there was no sign of the Old Firm at the Database/Interactive Stand, who were giving away old issues of their magazines. Not an ST World or ST User to be seen though, which seemed a bit strange. Perhaps they were keeping their heads down after the Little Green Goblins Virus fiasco episode. As someone who picked up this nasty little infection, wasting a few hours until he discovered it but not suffering permanent damage, the lesson is: don't trust ANY disk!

All the others

It would be impossible to list all the stands that had ST goods for sale, but a quick mention of some of these stalwarts showing the flag is in order. Third Coast Technologies, Frontier Software, Silica Shop, Gasteiner, Power Computing, Kuma, B Bytes, Softville, Evesham Micros were all there. They had good deals on offer for purchasers, and time to chat and explain their offerings. This kind of service is not always available from the run-of-the-mill computer supplier, and ST owners are fortunate to have such a responsible bunch of dealers and suppliers to look after their interests. End of advert!

No ST, No Comment

And to end on a negative note, what about the people who weren't there? Like Atari. Acorn were the only computer manufacturer to have a "village" where they and a large number of supporting exhibitors showed a good range of products demonstrating all the BBC's capabilities. Why no such commitment from Atari? Perhaps they deemed this show not the time and place, but with so many people attending, wouldn't this be better and more cost-effective marketing exercise than the ludicrous ST television adverts they ran before Christmas? Still, it wasn't a bad show. See you at the next one!

Telephone Contacts:

HiSoft:	0525 718181
GST:	0480 496789
GFA:	0734 794941
Compo:	0480 891819
Golden Image:	081 518 7585
Pandaal:	0234 855666

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Reviewed in ST Format (August '90) **87%**

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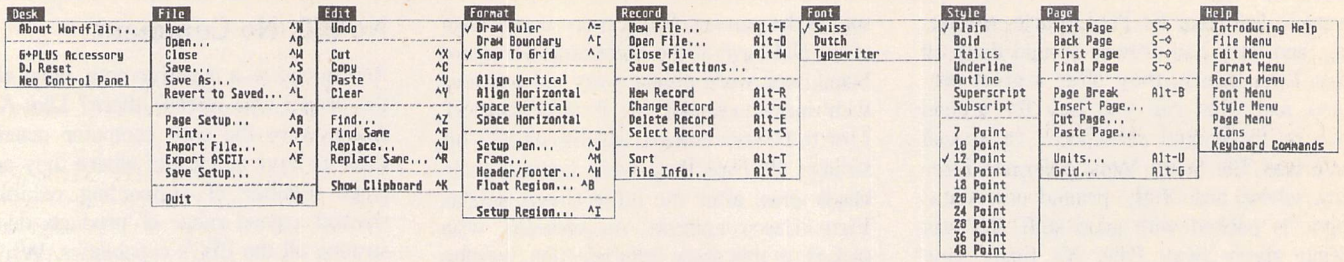


Wordflair

To make its mark in a competitive market, a word processor must now offer something different. Of the new or upgraded programs that emerged in 1990, Script is speedy and very pleasant to use, Write On seems to give good value for money, Calligrapher is feature-packed and interesting, Protext version 5 is extremely powerful, and Wordflair is... different. Different, because it can't really be called a word processor at all - better, perhaps, to describe it as a 'business compendium', with multi-font word-processing and database-like and spreadsheet-like elements, together with page layout facilities, line drawing, and the ability to create simple graphs and import graphics. John Mallinson reports.

Version 1.01 of Wordflair was first seen over here in the spring of 1990 when the US version was imported and sold by CMV Computers. Since then it has been officially adopted by HiSoft, who have now released version 1.14, anglicized, and with some significant improvements. HiSoft should be able to update the original US version for a reasonable fee.

Wordflair requires at least a Megabyte of memory; two floppy disk drives or a hard disk are recommended. It runs in monochrome or medium resolution colour on either the ST or TT. A three-disk set includes the usual selection of Swiss, Dutch and Typewriter GEM fonts suitable for 9 and 24-pin dot matrix printers. Font folders can be created by using the included Atari GDOS Installation program which takes most of the hard work out of installing fonts and setting up an appropriate ASSIGN.SYS file. An unexpected bonus is a custom version of Code-Head's G+Plus replacement for GDOS, which is claimed to be faster and better than Atari's original.

Program design

The program presents you with a word processor's usual blank editing area. This is shallower than normal, only accommodating 16 lines of text, the top quarter of the screen being taken up by the menu bar, a large icon area and a ruler. New terminology appears here as the editing screen is known in Wordflairese as the 'Background Write Region' - background, because on top of it you can draw other regions for insertion of text (Write Regions), graphics or graphs (Graph Regions) and mathematical functions (Calc Regions). Users of DTP programs will be familiar with the idea of frames containing text or graphics which can be moved and adjusted to obtain the desired layout; Wordflair's regions are very similar, although text cannot be made to flow from region to region. Usually the Background Region will be used for most of the text, with extra regions drawn in for text with different justification, graphics, graphs or calculations.

The symbols on the icon bar are switches for creating the different types of region, displaying the regions' names rather than their contents, controlling a grid display, invoking Help, switching to drawing mode, deleting regions and changing page. The greyed-out display relates to the database functions. All of this contributes to a rather cluttered screen display. The icon bar cannot be hidden as it can in Script: it seems to me that a happier idea would be to have more of the screen on view and for the icons to appear at a click of the right mouse button.

WP and layout functions

Wordflair has an adequate set of word processing functions: cut and paste, search and replace, implementation of headers and footers, text styling, tabs, indents and page numbering. Block selection is by 'click and drag' with the mouse, or a line or paragraph can be selected from the keyboard. Cut and paste use the now standard Control-X/Control-V key combinations. Most commands may be implemented either from the keyboard or the menus, though some of the key combinations are unusual: Shift plus left or right arrow key take the cursor to the previous or next page rather than to the beginning or end of the line. It is annoying that no standard set of commands exists amongst the Atari word-processors. Only one document may be edited at a time and the current version has no spelling checker. The screen display reacts as fast as other multi-font GEM word-processors such as WordUp and Microsoft Write, but more sluggishly than Script and much slower than Tempus Word and Protext.

A single ruler line affects the whole document and text alignment and indents cannot be changed within a region. However, this is not as limiting as it seems, since separate Text Regions with different justification (but the same tab settings and indents) can be drawn on the Background Region. The program handles multiple text columns quite neatly and speedily, but hyphenation, which is really needed in multi-column layouts, is not supported. If columns are used, they will appear throughout the Background Region of the entire document. Wordflair shares the schizoid nature of some other multi-font WP's in using ruler measures of inches, centimetres or picas but still having line spacing defined in the old typewriter fashion of 'single', 'double' or 'one and a half'.

A column or graph-paper type grid can be displayed and regions can be snapped to it. There are also various commands for aligning regions with each other. Single pages can be previewed to show their overall shape when printed, though lines of text are only shown as grey bars and the drawing of images considerably slows up the display. The page preview looks elegant but is unnecessarily small and, for some reason, fully justified text is not shown as such.

Maths functions

Calculation Regions can accept numerical information or formulae, either of which are entered via a Calc dialog. Formulae can contain references to other Calc Regions (e.g. Region A = 2 * Region B) and quite complex spreadsheet-like layouts can be constructed in this way. Eleven pre-defined maths functions may be used: these range from the

simple average of a series of numbers to standard deviations, with various financial functions in between.

Graphics and graphs

Wordflair can import and display pictures in either .IMG or .GEM format. Surprisingly, files from the most widely used paint program, Degas, are not accepted - an odd omission which is offset by the provision of the separate CONV2IMG.PRG which will convert pictures in most ST formats to .IMG files and also allow you to crop and rotate them. Unfortunately, CONV2IMG does not save compressed .IMG files, so that picture files on disk are about twice as large as necessary. Pictures can be re-sized but not cropped within Wordflair, and there is no provision for retaining the original proportions of the image. Since graphics are loaded into their own Graph Regions, they may be moved around the page and re-arranged as easily as in a DTP program: text can be made to flow on either side of them.

Graphics do not seem to be totally held in memory: moving past a picture and then back again causes the image to be read again from disk. This is no great problem for hard disk systems, but will slow operations considerably for those without that luxury. The work-around is to create the appropriate Graph Regions but not to import the pictures until the final editing.

Line drawing is a useful feature for setting up rules between columns, labelling drawings, etc. Boxes can be created by defining empty regions and specifying visible boundaries which can be in one of three widths, with squared or rounded corners. These modest facilities are adequate for embellishing layouts.

Graph drawing in Wordflair is very simple, both in execution and outcome. You can make bar charts, pie charts or line graphs, but are limited to eight data sets. Data can be entered into the graph set-up dialogue as numbers or as references to other Calc Regions within the document. In the latter case, if the numbers in the document are changed the graph is re-drawn appropriately. Labelling of the graph axes is distinctly crude.

Database functions

Creating a database within Wordflair is a straightforward matter. The program permits two types of field, text and numeric, which are drawn and labelled on a blank document. This document then becomes a data entry form, the data itself being held in a separate file. Most regrettably, it is not possible to import data from other programs or to export data from Wordflair.

Data can be sorted into ascending alphabetical or numerical order on a single field. Performing repeated sorts does make it possible, for instance, to organise an address list by surname and then organise it further by Christian name. The original data file is kept in the order in which the records were entered and not re-organised by sorting the file in memory. To save a newly sorted file or a subset of an existing file, it is necessary to rather laboriously save each record to a new data file.

For merging data into other documents one only has to create Write or Calc Regions in the appropriate places with the same names as the database fields. Normal Write and Calc Regions are of a fixed size and position and are therefore unsuitable for data which may vary in length. Wordflair has 'floating' regions for this purpose which expand and contract according to the length of their contents and move in relation to other text.

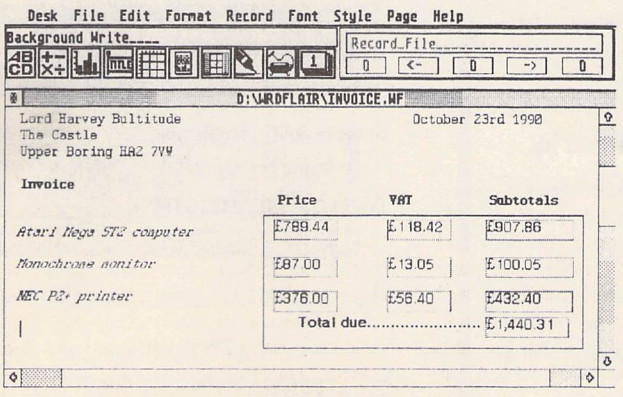
Wordflair's database system is about as simple as one can imagine. It seems quite adequate for relatively small mailing lists and such, but I would be loath to commit large amounts of data to it, knowing that it cannot be retrieved for use by more sophisticated programs.

Output

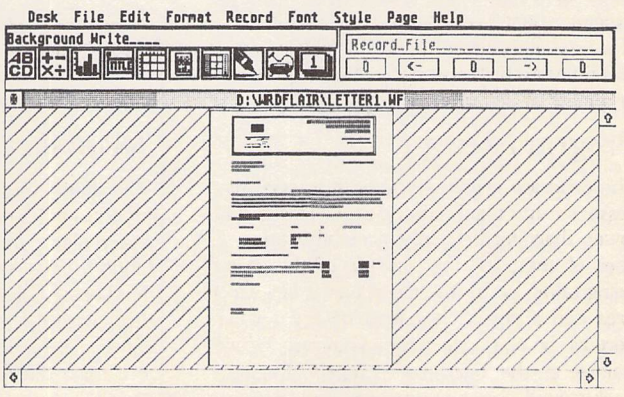
Printed output from Wordflair will look as good and appear as fast as your printer will allow - that will usually mean excellent quality at a rather slow pace. Remember that graphics mode printing on anything but a laser printer is going to be much slower than when the printer's own fonts are used and, unlike other multi-font WP's such as Script, WordUp and Write, there is no provision for printing draft copies at speed using the printer's own fonts.

Too many icons and too little room for text? At least the rulers can be removed.

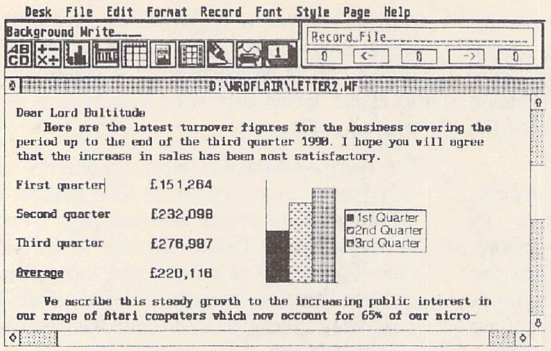
Multi-column text with an extra superimposed Text Region for the heading. Column grid display is on.



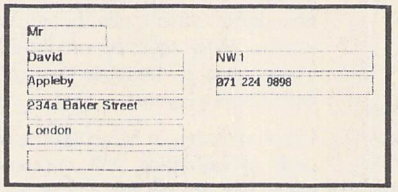
An invoice: the VAT, subtotals and total all come from formulae which will be re-calculated if the price data is changed.



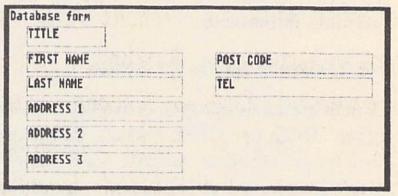
The Page Preview: it is active in the sense that regions may be selected, moved, etc.



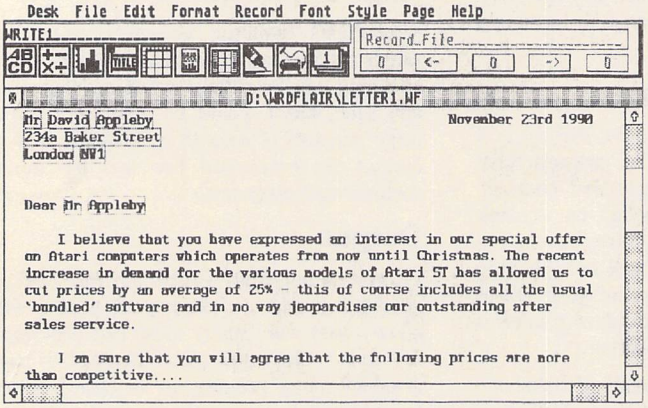
A graph produced from data within the text



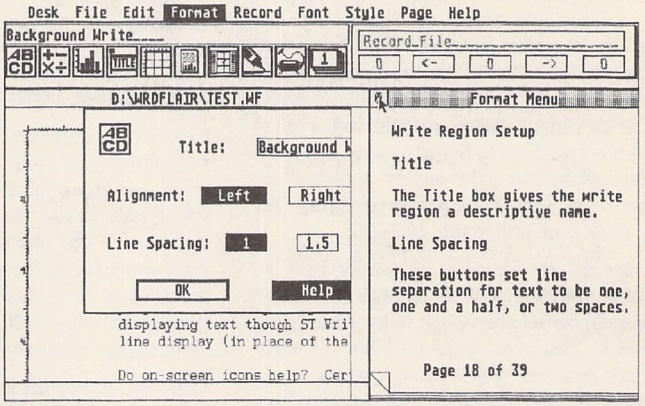
A typical data entry form



Here, the region names only are shown. To merge data into a document, regions with the same names have to be created.



Name and address data merged into a form letter



One of the Help screens; these are usually 'context sensitive', in this case called up from a Region Setup dialogue.

One of Wordflair's idiosyncracies presents itself when it comes to printing. You are offered the choice of WYSIWYG or Optimized printing: the former prints the document as shown on the screen, the latter adjusts inter-word spacing in a more satisfactory manner, giving a tighter look to documents but usually changing the position of line endings and hence the overall layout. I do not understand why this has been done.

Documentation and Help

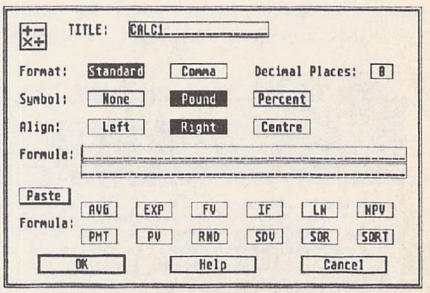
The excellent manual is divided into tutorial and reference sections: various files on disk supplement the written tutorial and there is also a collection of template files which give a good idea of the program's capabilities. There are a large number of help screens which can be called up by clicking on the Help icon, pressing the Help key or clicking on the Help box which is present in many of the dialogues.

Conclusions

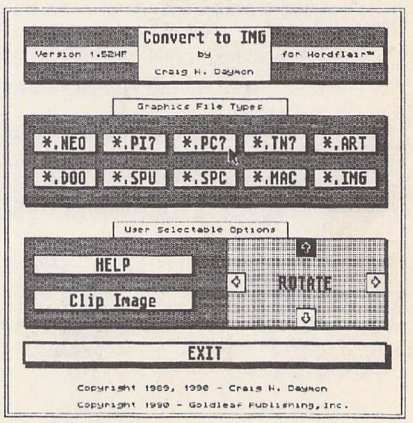
Wordflair could be dismissed as having a pot-pourri of basic functions from a variety of different types of program and proving no substitute for the real thing. I think that would be too harsh: the program does not try to challenge WordUp, K-Spread and Superbase on their own ground; it attempts, instead, something new (at least on the ST), which is to fuse together the essential elements of each type of program. As David Link of HiSoft observed "...most computer users only use about 20% of the capabilities of their word processing, page layout and data manipulation software. ...Wordflair is the first software package that combines that critical 20% of each utility..." David is biased but has a point! Other word processors such as Protext and WordPerfect have much more powerful data merging capacities and can do sums, but none has anything like the combination of features of Wordflair.

Who may use it? Perhaps the (very) small business, the club, or the home user who doesn't want to invest considerably more than the £80 price of Wordflair in a word-processor + DTP program + spreadsheet + database! It is in some respects a niche product and I am sure that users should tell Goldleaf Publishing (via HiSoft who seem keen to listen) to what extent it meets or falls short of their needs. Further development is promised, and American sources are already talking of a more fully-featured version 2.

Product: ..... Wordflair v1.14
UK Price:..... £79.95
UK release: ....December 1990
Publisher:..... Goldleaf Publishing, Inc.
Supplier:..... HiSoft
The Old School House
Greenfield
Bedford MK45 5DE
Tel: 0525 718181



The Calc dialogue: note the pre-defined functions



CONV2IMG.PRG, showing the file types that may be converted - only one way, though.

ONE STOP DTP

CALAMUS OUTLINE ART FSP 3 PAGESTREAM TIMEWORKS SIGNUM 2
SDO MERGE/INDEX/PREVIEW/GRAPH HEADLINE CONVERT
SCRIPT PCG FONT DESIGNERS FONTVERTOR FONTKIT+ 3
WORD PERFECT CALLIGRAPHER ANY OTHER SOFTWARE
DIGITISERS SCANNERS OCR EMULATORS DMC RIP DESKTOP
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Byelorussian Chinese Chuang Czech
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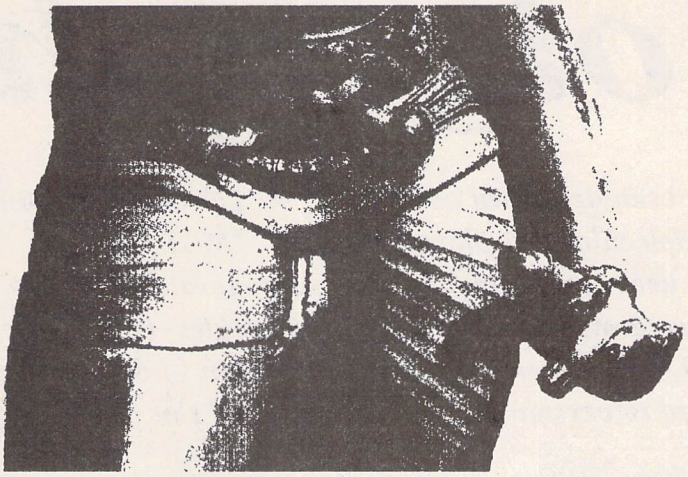
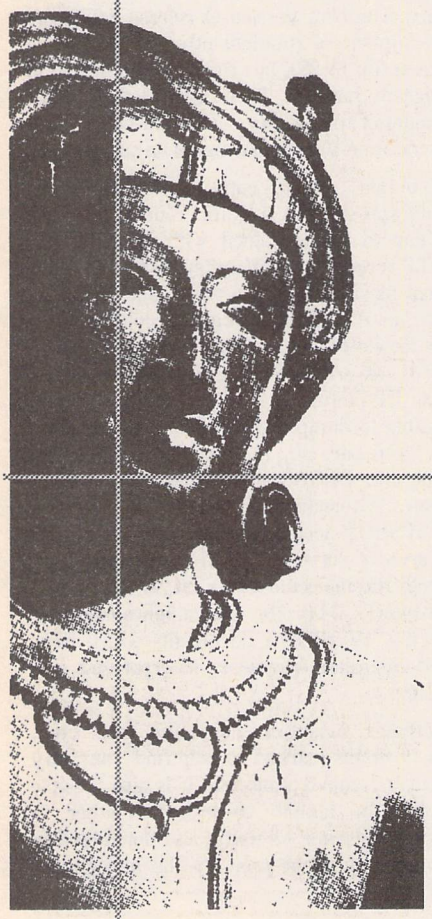
Estonian Farsi Finnish French Georgian
German Greek Gujarati Hebrew Hindi
Hiragana Hungarian Icelandic Irish Italian
Kanji Kashmiri Katekana Kazakh Khasi
Kirghiz Kurdish Ladakhi Latvian
Lithuanian Malaysian Manipuri Marathi
Mizo Moldavian Mongolian Naga Nepali
Norwegian Old Cyrillic Polish Portuguese
Punjabi Pushto Rajasthani Russian
Sanskrit Serbian Serbo-Croat Sindhi
Slovene Slovak Spanish Swedish Tajik
Tamil Tibetan Tigrinia Turkmen Uighur
Ukranian Urdu Uzbek Vedic Vietnamese



hundreds of **Fonts**



GDOS
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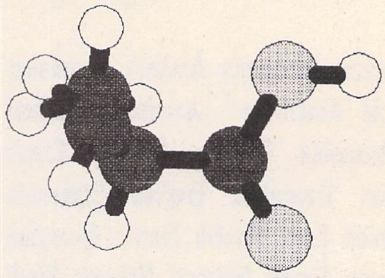
Molgraph



Molgraph has been described as "a Lego set for chemists" and is termed a "Molecular Graphics Program" (MGP), a program that uses computer graphics to generate, display and rotate three-dimensional models of molecules. Dr. S.G.D. Henderson not only reviews the current version (1.01) but also looks ahead to version 2, available in April this year.

Molecules are the combination of atoms held together by chemical bonds, and everything about us comprises them, from the simplest gas molecules which contain only two atoms, to the massive DNA molecule which carries the very essence of life.

Unfortunately, molecules which contain more than a few atoms are rather difficult to envisage as they are three-dimensional structures. Before the advent of molecular graphics programs, it was necessary to build ball-and-stick models to portray the actual shape of molecules. This process was time consuming and required a high degree of skill. Fortunately, computer technology came to our rescue in the shape of MGP's. Against this, it has to be said that these programs have a fairly specialised market, that the programming involved is complex, and that the resultant packages often cost several hundred pounds. Atari owners were fortunate when Dr. M.J. Forster decided that a cheap alternative was required for his work, and Molgraph was born. This review started out using Version 1.01, but finished up using a pre-release beta version of Version 2.0.

Molgraph started life as a PD program and was then developed into its present commercial form, aiming at a slightly different market from other molecular graphics programs. It has neither the power nor the complexity of some molecular graphics programs, but what it does have is the remarkable price tag of only £12.95! (This is the price of version 1.01.) This low price is in no way reflected in the high quality of the program. Running on any ST from the 520 up to the Mega 4, and STE compatible, Molgraph runs in high resolution monochrome or low resolution (16 colour) on a television. The package consists of an 18-page (A5) ring-bound manual, which is well laid out but lacks an index, and a single-sided disk which is not copy-protected, thus enabling backup or transfer to hard disk. A cut-down demonstration version of the program is supplied which is PD and is intended for you to distribute to your friends to encourage them to purchase the full program - a nice touch. Version 2.0 is GEM'd in a conventional manner and makes full use of dialogue boxes - the absence of these was criticised in the ST World review of version 1.01, but these are now fully implemented.

Getting Started

The program is run by double-clicking on MOLGRAPH.PRG. You are then requested to choose a co-ordinate file (.CRD) using the standard GEM item selector box. These .CRD files are the format that Molgraph uses to store structures, and their format is of little consequence to the average user. Supplied on the disk is the folder PDB_CRD which contains a series of co-ordinate files for you to experiment with and to assist in the building of your own custom molecules. Having selected a suitable .CRD file, you are asked if you want to use the BUILD feature. This is for more advanced use, and the manual recommends rejecting this option until you are more experienced with the operation of the program. The program briefly displays the number of atoms in the loaded file and then the molecule is drawn in VECTOR mode. This is the simplest display mode and only shows the bonds and not the atoms in the molecule.

This display can be converted to the more conventional type of ball-and-stick display in one of two different forms. The first (ball-and-stick 1) shows the atoms as different sizes but not coded.

The second type (ball-and-stick 2) uses colours and shadings to differentiate between the different types of atoms in the molecule.

In addition to these common types of display, there is a fourth type available - space filled. This display does not show the bonds between atoms but represents the atoms as spheres, and where two atoms are bonded it shows this as an overlap of their spheres.

All of the diagrams in Figure 1 are of the same molecule - ethyl benzoate - and are all rotated to the same orientation.

Rotation

Once loaded, a molecule can be rotated in any of the three dimensions. Version 2.0 now retains the selected display mode after either rotation or translation. This is an enormous improvement over earlier versions which reverted to vector display after any such operations. It is also possible to rotate the molecule about any of the bonds in the molecule. The size of the molecule can also be altered using the SCALE option.

The rotation is not a real-time display, but this effect can be obtained by using the MOVIE item from the DUMP option. This dumps a series of 10 rotations (in any of the display modes) to disk in DEGAS format, and these can then be displayed sequentially using the supplied program MOLDEMO2.TOS. This is a remarkably effective method of watching the molecule rotate in almost real-time. Be warned, though, that this option requires a disk with 360K of free space. The beta version of release 2.0 allows for numbers of rotations other than 10 to be chosen (up to 99), but the MOLDEMO2.TOS program has not been upgraded to take account of this facility - it should be rectified by the time Version Two goes on sale.

To obtain a hard copy of the molecule, Molgraph supplies a dump routine which is similar to that obtained with Atari's ALT-HELP screen dump. Version 2.0 has an additional hard copy option which allows you to save an ASCII file containing commands in the Hewlett Packard Graphics Language: a useful feature if you happen to have access to an HP plotter or HP Laserjet III. It is also possible to dump the entire screen (including the menu bar, etc., to disk in DEGAS format using the DEGAS option from the DUMP menu. Alternatively, using the supplied SNAPSHOT accessory, it is possible to grab an area of screen in .IMG format to incorporate the molecule into First Word Plus or Timeworks DTP. The disk supplies examples of First Word Plus documents which have such Snapshot fragments incorporated into the text.

Molecular structures can have their component atoms marked to help find your way about a complex molecule. It is also possible to list the atomic co-ordinates either to screen or printer - a useful additional facility but unlikely to be used by the majority of users.

Building your own

The other main use of Molgraph is to build up molecules of your own using the BUILD option. To do this it is necessary to answer YES to the initial question "Use Build Option?" when starting the program. You are

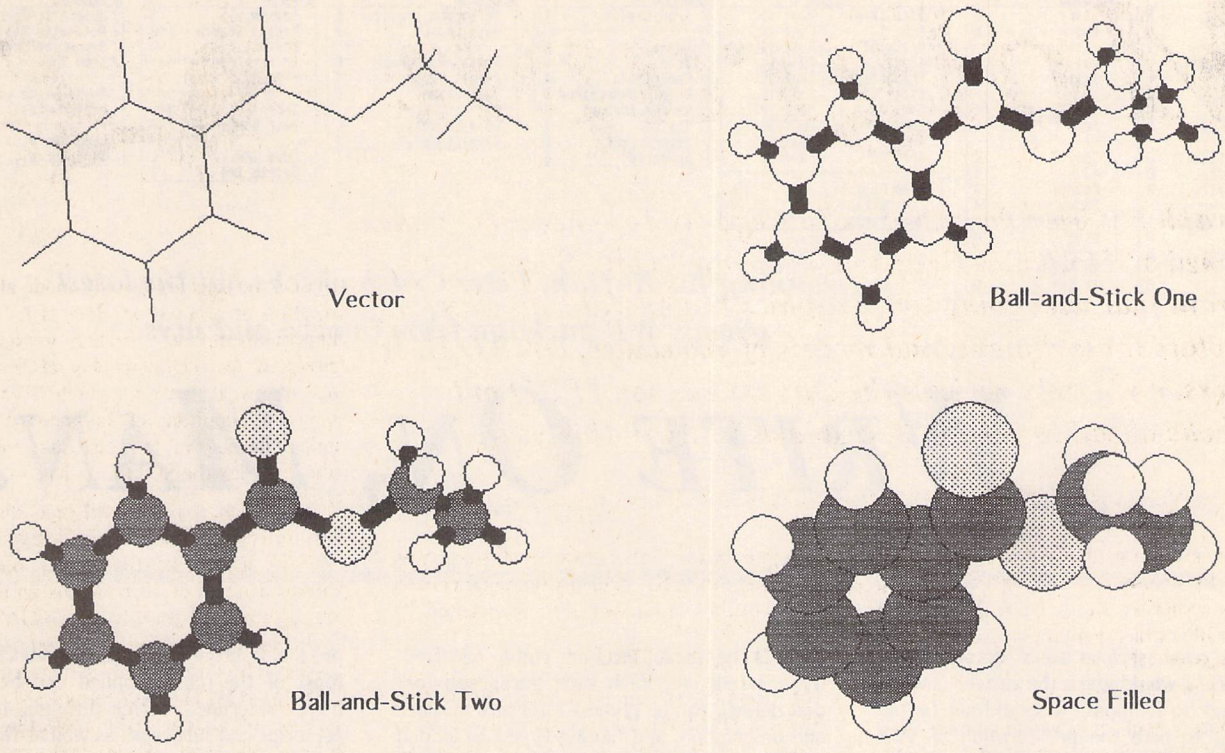


Figure 1: The Four Display Modes

then asked how many atoms are required for building - the default value is 100 to give plenty of room. The method employed uses fragments supplied on disk (or fragments you have already saved) and adds them together. The manual details two examples of this and leads you through the process step by step.

Although this process seems initially difficult, with a little practice it soon becomes second nature, and fairly complex molecules can be created with little effort. It would be nice to be able to move fragments around using the mouse, but considering the cost of commercial equivalents on other machines, I find the Molgraph method perfectly acceptable. Version 2.0 allows you to rotate or translate molecules (or fragments of molecules) independently of each other until they are orientated correctly, at which point you can use the "Make Bond" facility to form your molecule (illustrated in Figure 2). This means that you can load as many fragments as you like from disk and orientate them independently - the only limitation appears to be available memory. I have not encountered any such problem with my 1040 but there are limitations if you are using a 520!

The "delete atom" feature has been expanded to include the deletion of whole molecular fragments. This simplifies the task of building up your own library of molecular fragments using the supplied examples.

To my mind, one of the problems with v1.01 was that after rotating about a bond, you had no idea whether the molecule was feasible in terms of inter-atomic repulsions. This is now dealt with by the "Test" option which checks for repulsions between atoms - the so-called hard sphere contacts. This is a valuable addition. The notes I received with the test version suggest that this facility will be expanded before release to incorporate Van der Waal contributions to the molecular potential energy. This is of interest only to fairly serious users - personally, I think this would be wonderful. The suggestion that a future version will include structure optimisation by minimising potential energy could put a simple Molecular Mechanics program into the ST market, which would be of great interest to University users like myself.

Data files

The supplied .CRD files are from the Brookhaven Protein Database which, if you have access to it, provides an endless source of complex molecules. I am uncertain whether many users will have the facility to utilise this, and I am also uncertain whether the files are in the Public Domain anyway.

Overall, I think that anyone involved with Chemistry or Biochemistry will find this program to be invaluable, irrespective of his/her specific interests. As a teaching aid, it is invaluable from GCSE up to University postgraduate level, and I cannot praise the program highly enough. Many thanks are due to Dr.M.J. Forster for his far-sighted work and to the ST Club for distributing it at such a bargain price.

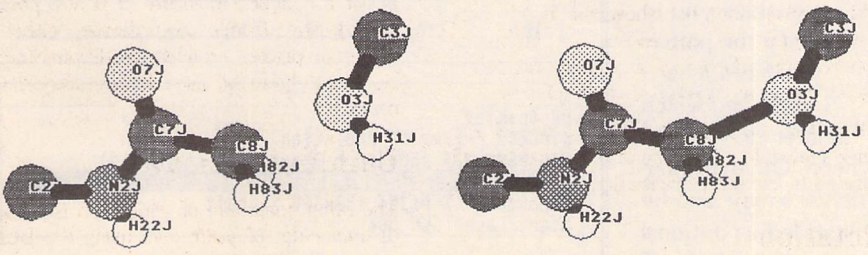
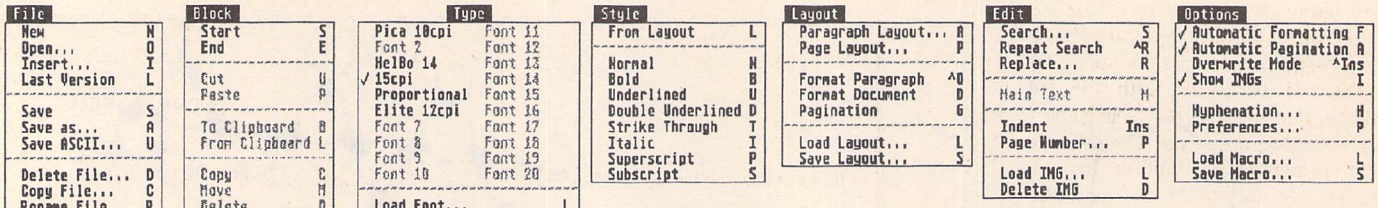


Figure 2: The Build Feature, showing the creation of a bond

Product:..... Molgraph v1.01
Supplier:..... The ST Club
Price:..... £12.95
Version 2 will be available from April 1991 at £18.95



Donning his Kaftan, Peter Crush checks out the latest groovy WP package from Compo and says:

WRITE ON, MAN!

What do most "serious users" do with their computers? I would guess the answer is word processing! So I suppose it should not be too surprising to note the proliferation of WP packages for the ST, and lately the software houses have been falling over themselves to release new ones. Compo Software, a European firm based in Germany and Holland, have opened their own U.K. Company headed by ex-GST man Neil O'Nions, and have recently launched yet another WP called Write ON. The name may be familiar, as this program has been around before under the now defunct Cavendish label. However, this is a completely revised, re-packaged U.K. version with any previous bugs ironed out, and is poised to grab a chunk of the market. So what does it offer?

Paragraph Power

With the majority of ST wordprocessors, you type in your words, shuffle them about, maybe add some bold or italic styling here and there, and print them out. Fine for letters or simple Reports, etc., but what if you want to have some headings in eye-catching large letters, or use different fonts? Well, you either had to use a Document Processor or a Desktop Publishing program, both of which could be expensive and use complicated ways to carry out what should be a simple task. Write ON differs from the norm and enables you to have up to twenty different Fonts in a single document. It offers many of the features of a DTP program, but with the ease of use of a WP. In fact the usual distinction between these two types of programs becomes severely blurred with this new WP. The power of Write ON is based around its novel use of a Paragraph Layout feature. Using this you can set up and save a number of different types of Paragraphs, which do not have to be the conventional blocks of words, but can be as little as a single word. Each Paragraph can have a user-defined set of attributes including Font, line spacing, left and right margins, whether text is centred, left or right justified, hyphenated, etc. Each such paragraph format defined can be given a reference number and description, and having typed or loaded in your text, you can re-format it by a simple mouse-click to conform to the chosen paragraph style, much like using Timeworks for example. The resulting on-screen display is a bit-mapped, more or less WYSIWYG one, which is useful. As some of the fonts used can be proportional ones, the use of the Tabs feature will be necessary to make sure that any columns, etc., are properly lined up when you print your work out, even if they look all right on screen without the tabs.

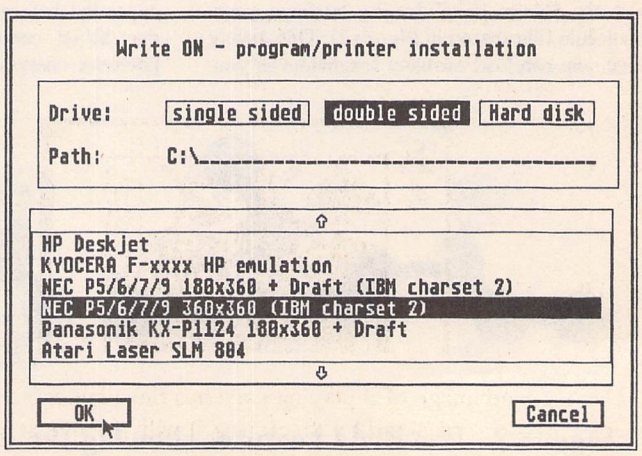
Different displays

The first thing you notice when using Write ON is that instead of the usual ST system font, the screen shows what you are typing in a more delicate MAC-like display. Whilst this looks a bit strange at first, you may soon get to like and even prefer this. If you set up a Paragraph style with one of the larger font sizes, you can pick out all your headings for example and re-format them into the new size and style, e.g. 14-point text, bold, centred. These will then show as such on screen and when you print out, ideal for producing price-lists or simple hand-bills etc. Most of the fonts supplied can be used as bold, underlined, strike-through, italic, superscript and subscript, as well as Normal.

Print Power

There are two sorts of font in Write ON: those used for screen display and those used for printing. The program can be configured to load the particular fonts you require automatically so that these are all available to you, depending on the amount of memory you have spare. Otherwise, Write ON defaults to loading just the 10 cpi Pica font, but you can load in any of the other screen fonts as you need them from the Type menu whilst you work. The printer fonts are not loaded from disk until you come to actually print out your document. The way the program handles fonts is very straightforward compared to the usual ASSGN.SYS struggle, and you don't have to understand anything to make it all function. If you want, you can even un-load a font from the Type menu; it's that simple! Write ON can utilize any GEM font from other sources, and directions for making the necessary modifications and installation are in the Manual. As a bonus, a font editor program is also supplied with the

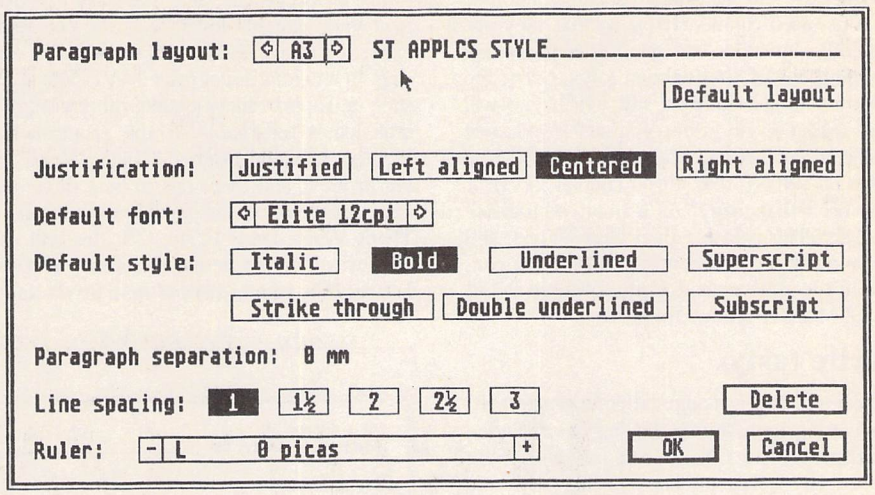
The Installation program supplied with Write ON enables you to specify the path if you have a hard disk, and which printer driver you need. Other printer drivers may also be installed as optional extras later, if wished.



package to let you edit or create fonts, and there is also a utility program that can convert Signum fonts to Write ON format which will be issued with the free next update, due soon. When you come to print out your document, you can chose to utilise your printer's own built-in fonts for fast printing, or use the bit-mapped GEM fonts supplied in the program (like WordUp), or a mixture of both! The setting up of the printer driver is very easy, being done during the Installation program which configures Write ON to your system. Drivers for all major makes of printer are supplied, including Laser printers and HP DeskJet/DeskJet Plus, and all the others you would expect.

Picture Power

As in First Word Plus, IMG pictures can be imported into your document. These can be loaded in at the position of the cursor, and are then displayed on screen. Unlike First Word Plus, the image can then be re-sized using the mouse pointer to drag the corners to the desired size. This really is quite an amazing feature in a mere wordprocessing program: you are almost talking DTP power here, and it's very easy to use! Don't expect to be able to flow text around the graphic or have the ability to do any further drawing, etc., on screen. If you want this degree of sophistication you really must pay at least double for a DTP package, and bear in mind these are not much cop as word processors! Only IMG format is supported, but there are plenty of image converter utilities about in the Public Domain if you only have Degas pictures. That's Snap, a Desk Accessory snapshot program, is supplied with Write ON, which enables you to save any screen picture, or part of one, to disk as an IMG file. When a Write ON file which includes an IMG picture is saved to disk, the actual graphic is saved as an integral part of the document, whereas with First Word the program has to re-load the picture from its original location elsewhere.

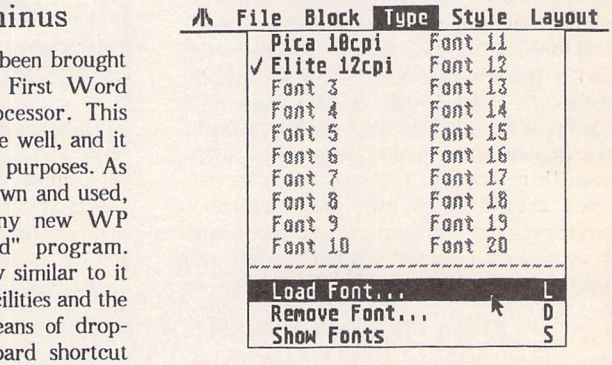


Setting up the Paragraph format could not really be any easier: just click on the various options and type in some descriptive text.

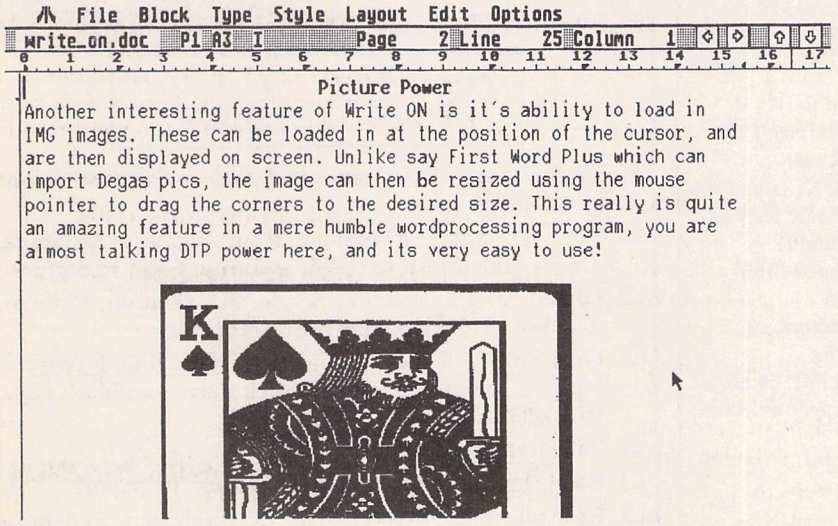
First Word plus or minus

Like many ST owners, I have been brought up on First Word, and then First Word Plus, as my daily word processor. This trusty old friend has served me well, and it gets used all the time for most purposes. As First Word Plus is so well known and used, it makes sense to compare any new WP against this almost "standard" program. Write ON manages to be fairly similar to it in terms of all the usual WP facilities and the way they are accessed by means of drop-down GEM menus and keyboard shortcut commands. If you are used to First Word you would soon adapt to using Write ON, which can import First Word .DOC files, preserving such attributes as bold or italic text. ASCII text files can also be loaded in. Write ON saves documents in its own .WO format which is not compatible with other programs apart from That's Write, another Compo WP. It can, however, save documents in ASCII format, and improves on First Word in this respect in that you can specify whether CR/LF is inserted or not at the end of each line of text. Files with CR/LF after each line are suitable to be read from the Desktop as TXT files; those without CR/LF are ASCII files which incorporate a CR/LF only at the end of each paragraph. These are more suitable for use with DTP programs, etc., where you want to "pour" the text into columns, and they should be saved as .ASC files to differentiate between the two types of non-WP text files.

A feature I missed in Write ON was a word counter, but the menu bar does give you a display which shows you the page number, line number and column that the cursor is at. However, a word counter is promised in the next release of Write ON, which will be provided free of charge to all registered users. On the plus side though, Write ON supports macro's, which First Word does not. Using



Twenty fonts are far too many in one document (unless you're producing a Font Catalogue!), but they are available if you want them. Load them in and out at will if you are short of RAM.

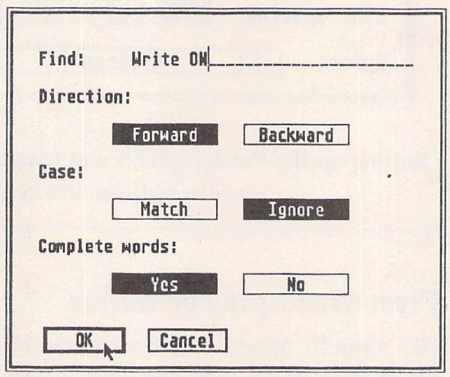


This scanned image of a playing card has been imported into the document and re-sized by stretching it with the mouse pointer.

this feature enables you to set up a number of often-used chunks of text so that they are instantly inserted into your document by pressing one of the function keys. Great for your name and address, say, which you will find useful every time you write a letter! Macro's can actually be assigned to all the keys on the ST (bar three control keys), if you need that many! As a final comparison, text scrolling is faster than First Word, and there are keyboard controls to take the cursor to the start or end of the document, but no GEM slider bars to the screen.

Write tasty

In terms of Block manipulation, merging text, formatting text, saving, loading and printing controls, Write ON is on a par with First Word. It scores on line spacing with the option to select 1, 1.5, 2, 2.5 and 3, with optional extra space between paragraphs. You can also define two left margins for each Paragraph, one for the first line, and another for the second line. This will enable you to retain indents or out-dents in text even when it is re-formatted. Other plus features are the ability to do automatic Saves at a user-specified time interval, widow and orphan control, and a feature that lets you automatically insert the system time and/or date in a variety of formats. All the "usual" WP facilities that we have come to expect are to be found in Write ON, and these are executed to a very capable level, with the one slight exception of a spelling checker, which is missing. In an entry-level-priced WP, which has such a superb specification otherwise, this omission is forgivable. If the program had this too, it would become "That's Write", its big brother, and there has to be a difference between the two! It is possible to up-grade to That's Write from Write ON; this will cost £50, which is the actual difference anyway between the retail prices of both products.



The Search and Replace dialogue box

Conclusion:

Points For: Budget priced, high spec., multi-font, easy to use WP with a good Manual and friendly customer support.

Points Against: The only minus is the lack of a spell checker.

If you already have a really good WP, Write ON may still be of interest to you because of its unique features. If you haven't got a WP and plan to get one, Write ON could well be your best choice.

Product:.....Write ON v1
Supplier:.....Compo Software
Old Forge Cottage,
7 Vinegar Hill,
Alconbury Weston,
Huntingdon,
Cambridgeshire
PE17 5JA
Tel:..... 0480 891819
Price:..... £49
System:..... All STs/TT, med/hi rez, one d/s drive.
Manifest:..... two d/s disks, 132-page spiral-bound manual.

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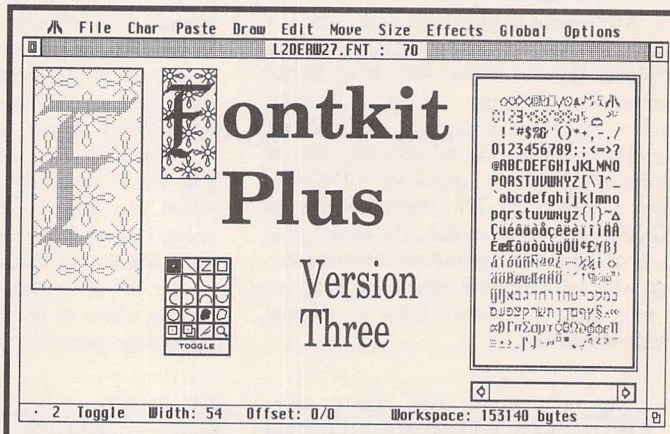


from the ST Club
Price: £19.95

Major Features of this powerful and sophisticated font editor include:

- ❑ Font Format Conversions from Signum, Calamus, Degas, Macintosh to GEM, and from GEM to Signum;
- ❑ Global Effects: Shadow, Shade, 3D, Contour, Pattern, Lighten, Thicken, Slant, Smooth;
- ❑ Grid Edit facilities: freehand, straight line, geometric shapes, bezier curve, nibs, block move and block copy, fill, zoom;
- ❑ 256-character Buffer;
- ❑ Show font to screen and Print font to paper;
- ❑ Re-scale font by point size, by resolution, and by a combination of the two;
- ❑ full keyboard shortcuts.

Calligrapher Professional

The Document Processor for the Atari ST.

1) Calligrapher Professional comes with 5 typeface families, in a total of 10 styles.

Zurich Medium, **Zurich Bold**
Holland Medium, **Holland Bold**
Holland Italic
Holland Bold Italic
MathSymbols αβχδεφγηABXΔEΦ
Ornaments ◔ ◉ △■■⧖
`Unitype Medium, Unitype Bold`

2) Vector outline fonts allow you to print big headlines or small print.
6pt to 128pt fonts.

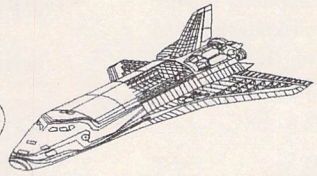
Headline 36pt

small print at 6pt using vector outline fonts.

3) Imports .IMG and .GEM graphics, which can be freely resized within Calligrapher. You can also convert, crop and manipulate Degas, and Neochrome pictures.

A 300dpi IMG

a GEM graphic



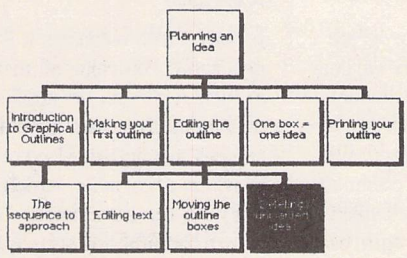
4) Automatic numbering of paragraphs, if you insert a new paragraph number, numbers further down the sequence will be corrected.

5) Indent and Outdented paragraphs (this paragraph is an outdented paragraph).

6) Use the character selector to access difficult to get at characters, or characters in non-alphabetic fonts.

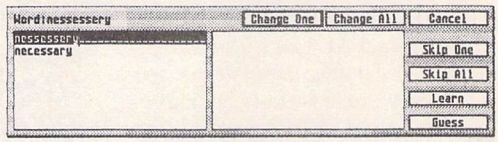
7) Multiple columns, have several columns on the page, edit with multiple columns on screen and preview your work.

8) Graphical outliner, plan your ideas using bullet charts and paste the results into your document.



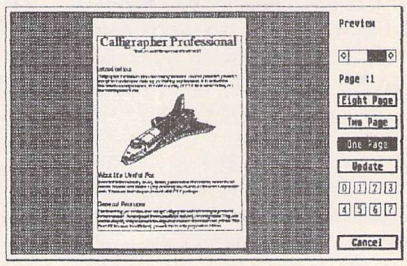
9) Cut, Copy, Paste and Clear. Implements the clipboard metaphor for easy editing of documents. You can cut out almost anything, including Graphics, rulers etc.

10) 160,000 word spelling checker, with phonetic and alphabetic guess. User dictionary, skip one or all occurrences.



You can also examine the dictionary to see what words it contains.
You can even check-as-you-type to check words as you work.

11) Preview your document before you print, you can view 1 page, 2 page or 8 pages at the same time.



12) Automatic layout of formulae. Symbols such as ***integral*** and ***root*** resize to fit their contents.

$$\sum_{x=0}^{x=100} \left\{ \frac{1}{x^2} \right\}$$

13) Layout tables automatically, gives you a great deal of control over the layout, alignment and even lets you put multiple lines in a table entry.

Column 1	Column 2	Column 3
Multiple Lines in a table	1.245	15.67
$\sqrt{\frac{1}{x}}$	2.45	76.33

14) Boxes, vertical and horizontal rules (lines) can be mixed into your document to add effect.

Calligrapher Professional requires at least 1MB of memory (Medium or high resolution monitor). This advert was printed from a 1040st (floppy disk) to a cheap BJ10e ink-jet printer.

This advert is necessarily brief and does not cover Calligrapher in any detail. For full and complete details on this product, or to order a copy contact Working Title the UK distributor. Calligrapher Professional £139 inc Vat

Working Title, PO Box 4, Eynsham, Oxford, OX8 1UD, Tel 0865 88 35 92

IN THE SCHEME OF THINGS

David Harvey reviews EdScheme, a low-cost implementation of the programming language Scheme, which is in turn an offshoot of LISP. Aimed at the education market as a successor to LOGO, it has already found a niche in American schools and colleges.

If asked to name the oldest programming language in current use, at least some ST users might correctly identify FORTRAN, still a workhorse of the scientific and engineering community despite the inroads of C. The *second* oldest may be harder to name - COBOL, perhaps, or BASIC. In fact, the runner-up in the longevity stakes is LISP, a language first implemented in 1960 by John McCarthy, which has been used ever since for its strengths in symbolic manipulation as a foundation of Artificial Intelligence research in the U.S.A.

But languages evolve (old joke - "I don't know what the major programming language of the year 2000 will be like, but it will be called FORTRAN..."), and LISP has changed more than most. This change is manifested as growth: with a number of principal dialects (MacLisp, Cambridge Lisp, Common Lisp, Golden Common Lisp) and extensions (such as 'Flavors', bringing object-oriented capabilities to the language), LISP is a much larger and more complex language than it was, and full implementations (which have traditionally featured rich programming and support environments) are restricted to the academic and research bodies able to support dedicated (and expensive) LISP systems.

However, a more recent offshoot of the language has taken a different path. SCHEME was developed at the Massachusetts Institute of Technology, and replaces the complexities of other LISP dialects with a syntax that is simple to the point of asceticism, yet elegant and extremely powerful. LISP stands for LISt Processing, and the list is the fundamental data type in all LISP implementations. As in Prolog, the distinction between data and program code is blurred by the identical implementation of both - clauses in Prolog, lists in LISP - and the decision of the designers of Scheme to combine this with traditional block-structuring (as in Pascal), and at the same time to allow functions to be treated as 'first-class citizens' of the language, with all the rights of other variables (including the right to anonymity, and the ability to be passed to and returned from other functions), leads to some unexpected and powerful results.

EdScheme, distributed in this country by Lambda Publications, was developed by Schemers, Inc. to provide a low-cost yet comprehensive version of the language for educational and home use. It is currently available on the Atari ST, IBM PC and Acorn Archimedes, and is being aimed particularly at the education market by the distributors, as a natural and more powerful successor to LOGO, to which many children have exposure in primary schools. The precedent for this is again American - Scheme has been introduced with great success in American schools and colleges, and now forms the basis of the MIT first year computer science course. As Scheme is not well-known here, I will give you a flavour of the language before evaluating the EdScheme implementation.

Scheme - the language

Scheme has enough in common with languages such as C and Pascal to enable anyone used to these languages to feel at home quickly. Like Pascal, Scheme is *lexically scoped*, which means that non-local variables and functions are searched for in enclosing functions in the definition environment, as opposed to when called. Unlike C or Pascal, however, variables are bound to values through an environment, rather than existing as locations on a stack. Amongst other things, this means that variables may maintain their values between invocation of functions: together with the use of functions building and returning other functions, the example of streams and generators below demonstrates how this can be used to implement object-oriented programming.

Recursion is fundamental to list programming, and one major problem with earlier LISP dialects was the need for large amounts of computer memory to use as stack areas. Scheme is implemented with tail-recursion optimisation, which means that common recursive calls do not need extra stack space, as they do not modify the current environment. As a result of this optimisation, all iteration in Scheme is implemented through tail-recursion - there are no looping operators such as 'while' or 'for'.

Streams and generators

A particular type of list implemented in Scheme can be used to give the impression of a sequence of items, which may (conceptually, at least!) be infinite. Such a list is known as a stream, and has two elements, the first of which is the first element of the list, the second a function returning the rest of the stream. Such a list is built using the operator cons-stream: the following two examples return streams generating all odd or even numbers and Fibonacci numbers respectively, by recursively defining the rest of the stream in terms of themselves:

```
(define (twos n) ; returns a sequence in
                 ; 2's starting at n
(cons-stream n (twos (+ n 2))))

(define E (twos 0)) ; E is the stream of
                    ; all even numbers
(define O (twos 1)) ; O is the stream of
                    ; all odd numbers

(define (fibs n1 n2)
(cons-stream n1 (fibs (n2 (+ n1 n2)))))

(define F (fibs 1 1)) ; Fibonacci
                      ; numbers....
(define L (fibs 1 3)) ; ....and also the
                      ; Lucas series!
```

The similarity of the stream concept to the mathematical principle of induction points to another strength of Scheme. LISP (and therefore Scheme) has its roots in a body of logical theory known as the Lambda Calculus (LISPers will recognise LAMBDA as the keyword which introduces the definition of an anonymous function): this and other points of congruence with logic and mathematics facilitates translation of arithmetical, algebraical and logical constructs into Scheme program statements, and has led to its use in research into mathematical verification of programs.

In some circumstances, it is useful to have a generator, returning all members of a series in turn. This can be applied to streams by defining a function as below, which itself returns a function. The returned function is stored in a variable, which can later be called with the parameters 'first and 'next, to return the first and subsequent values of the sequence. In fact, this definition packages data and function into an object, to which messages are passed: a simple but flexible example of object-oriented programming.

```
; A generator to produce the first item
; of a stream on calling (G 'first),
; the next on (G 'next)
;=======================================
(define (make-gen stream)
    (let ((init stream) ; let estalishes
                        ; local variables for
          (nxt (tail stream)) ; what follows
          (ret nil))
    (lambda (msg) ; lambda creates an
                  ; anonymous function,
          (begin  ; here returned as the
                  ; result of make_gen
            (cond   ; test messages
             [(eq? msg 'first) ; 'first
              (begin (set! nxt (tail init))
                 (head init))] ; return
                     ; head of stream
             [(eq? msg 'next) ; 'next
          (begin (set! ret (head nxt))
                     ; get head of rest
                 (set! nxt (tail nxt))
                     ; set nxt
                 ret)])))))) ; return

; example session:

==> (define LG (make-gen (fibs 1 3)))
LG
==> (LG 'first)
1
==> (LG 'next)
3
==> (LG 'next)
4
==> (LG 'next)
7
==>
```

Programming environment

EdScheme for the ST is provided in two versions. One, EDS.TTP, includes an editor and support for turtle graphics (another connection with LOGO), the other (EDSR.TTP) omits these, and is designed for use in situations where memory is short, or where a very large scheme program needs to be run. All aspects of EdScheme's internal memory structure may be altered through command line arguments, although it is stressed in the guide that this will hardly ever be necessary.

The accompanying documentation consists of an introductory *EdSchemer's Guide* and a *Reference*, comb-bound together in a single A5 volume. A README file on disk supplies corrections to the manual and describes ST-specific extensions, mostly concerned with graphics (but with some useful extras, such as a call to perform a directory listing, which returns a list of matching file names). These will enable anyone with some experience of LISP to start, but are not designed to teach the language - suggestions are made for further reading, some of which may be found at the end of this review. Also on the disk is a single example program, a three-in-a-row game that demonstrates graphics, object-oriented and AI programming, the computer players learning from their mistakes in earlier games, and becoming progressively stronger the more they play. I would have appreciated some smaller examples on the disk, although the guide makes up for some of this deficiency with many short functions and program fragments.

The system itself uses the ST's VT52 emulation - it is not a GEM'ed application, which means no windows or menus (presumably to keep it cheap and to aid portability). EdScheme is described as an incremental compiler: as commands are entered in the interactive environment, they are compiled to an intermediate form, improving over straight interpretation in terms of execution speed while preserving the friendliness of an interpreter. A nice touch in the environment is the typographical distinction between EdScheme output, user input, and program-generated output: on a colour monitor, these are different colours, on monochrome grey, bold and normal text respectively (although these assignments may be changed, as they are controlled by variables available to the programmer).

An editor with at least some knowledge of LISP's syntax is almost obligatory when writing LISP (or Scheme) programs. (LISP's other acronym is Lots of Insanely Stupid Parentheses...) The EdScheme editor uses Wordstar-like commands, which may not be familiar to many ST users but are at least reasonably logical - some functions are also assigned to the ST function keys, and a help panel can be displayed. The editor provides automatic indentation, and can differentiate between 'ordinary' lists of statements and Scheme 'special forms' such as if, define, and cond. As closing brackets are added, the lowest line of the screen displays the start of the list that is being closed, which makes checking balance very easy. In addition, moving onto a close bracket will highlight the matching open. Otherwise, a pretty standard set of editing functions is provided, to make the editor adequately powerful for its task.

Conclusion

Scheme has generated a great deal of excitement in computer science circles in the U.S.A., and is beginning to be regarded as a foundation for 5th-generation programming research in the same way as Prolog has been adopted by the Japanese educational and research establishment. For this reason alone, it is a language that is going to become increasingly important in the 1990's. At the price, I strongly recommend EdScheme to anyone with at least a passing interest in programming, as a sound implementation of a rich yet elegantly simple language.

Summary:

Points for:

* Elegant yet powerful language - integrated syntax-directed editor
* Inexpensive

Points against:

* Non-GEM user-interface
* Turtle graphics only

Over all:

* Worth investigating if you are at all interested in programming and programming languages.

Alternatives:

* XLISP is an implementation of an object-oriented LISP that has a long pedigree in the public domain (PD disk LAN.63), and is slowly evolving towards compatability with Common Lisp.

Recommended reading:

* Lambda Publications will be distributing **A Schemers' Guide to Self-improvement**, by Iain Ferguson, Burt Kaufman and Edward Martin, published by Schemers, Inc, the authors of EdScheme. All examples in the book will run under EdScheme.
* **Structure and Interpretation of Computer Programs**, by Harold Abelson and G.J Sussman, published by MIT Press, is an exceptional text on programming concepts, and uses Scheme for all its examples.

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System:..... All STs, mono or colour monitor

Long Day's Journey into Print...

Learning to live with the Atari Laser

With the recent announcement of the new Atari laser printer, the SLM605, it looks as though the old SLM804 is on its way out. However, there are still a lot of them in use and it should be possible to pick one up cheaply as dealers unload their stocks. Graham Thomas thought that passing on the hard-learned experience of almost three years' use at a university research unit might still help a few new users - and maybe even a few old ones.

I would award the SLM804 hardware about six out of ten. It does the job, but I wish certain corners hadn't been cut. For instance, there is no page counter - there's an internal display, with a series of coloured blobs to tell you roughly when it's time to change the toner cartridge or the drum, but a visible page counter would have helped us to allocate charges fairly.

Perhaps Atari simply didn't want us to see how few pages we can print before the 'add toner' sign lights up. The machine is rated at 3,000 pages per cartridge and 9-10,000 pages per drum. We have found that we get far fewer pages per cartridge, but that drum life is at least the stated amount. Maybe you can squeeze 3,000 short letters, with plenty of space between paragraphs, out of a cartridge, but single-spaced A4 typescript sucks up toner like there's no tomorrow. At just under £40 a go, a toner cartridge is not a trivial expense item, although it does seem cheap compared to the £170 cost of a new drum.

The Gentle Touch?

When you are told to add toner, you can generally prolong the life of a cartridge for a while by lifting the lid of the printer and closing it again without, shall we say, undue gentleness. This won't please the manufacturers, but if it's 5pm and you need to get a report out to a sponsor that afternoon it can be a lifesaver.

Maybe it's an understandable response to such abuse, or maybe it's another corner that's been cut, but the inside of the machine soon gets filthy with waste toner which eventually finds its way on to your printout. After much grief with tissues and the like, we eventually bought a specialised vacuum cleaner from Inmac. The cost was high but it has kept our two lasers clean ever since. We haven't tried to refill any cartridges with toner from the 'waste bin', but I have heard it can be done. Beware, though, as the stuff may cause cancer if inhaled.

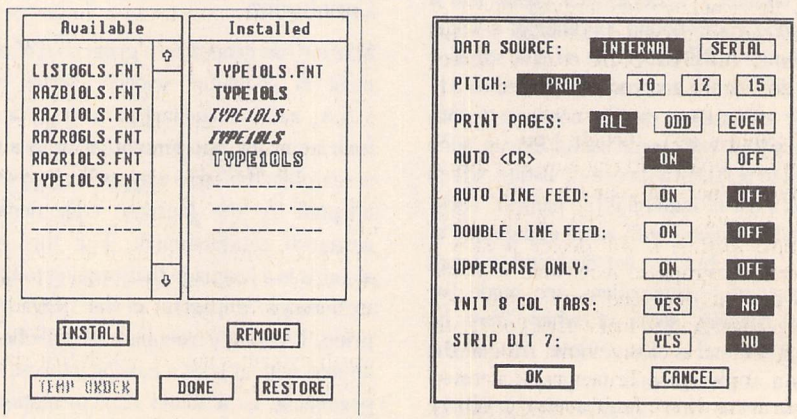
Because the printer connects to the computer via the same Direct Memory Access (DMA) channel as hard disks, Atari are quite specific about the order in which the bits of hardware should connect: computer -> laser printer controller -> hard disk. One of our printers works this way and this way only, but the other refuses to do a stroke unless 'incorrectly' connected in the order: computer -> hard disk (Atari SH205) -> laser. I would have thought this was something we'd done wrong, but Richard Seel had the same experience when reviewing the identical set-up for ST World.

It is well-known that the SLM804 needs to be switched on all the time the computer is running, unless the printer is disconnected completely. To avoid being driven mad by the beast's noise, you can buy a special switch that enables the right circuits to be completed while allowing the laser to be turned off. Skinflints like me achieve the same effect by pushing back the back cover (where the paper comes out) whenever the printer is not in use. The ST Club has found that a small jiffy bag provides a suitably hi-tech prop if the back flap won't stay far enough open to break the fan's circuit.

Generally speaking, the SLM's print quality is good, with nice strong blacks coming through in the graphics. Of course, you shouldn't believe the 'eight pages a minute' claim. There might be some improbable circumstance in which you could achieve this speed, but in normal use - e.g. printing a text-only Wordplus document from a hard disk - expect 3-4 pages a minute. Graphics, as with other laser printers, take more time, although the fact that the ST builds the page and then transfers it to the printer using the high-speed DMA channel means that the SLM is nippier with full-page graphics than a lot of other printers.

Back to the future?

Print speed and quality also depends on software. This is another area where Atari has cut corners. The printers were supplied with software which cunningly enabled them to pretend to be daisywheel printers - there's progress for you! The Diablo 630 emulator would have been bad enough even if it had worked properly. Its main restriction was that it didn't allow you to mix typesizes on a page, so if you wanted condensed footnotes or 12-pitch quotations within 10-pitch body



Diablo 630 Emulator: Font Selection and Printer Control

text - something a £150 dot matrix printer manages with ease - well, tough.

But it didn't even do what it was supposed to. If anyone ever managed to get the emulator to produce bold italics, I'd be grateful if they would tell the world how they did it. Bold: yes; italics: no problem; both together: in the configuration box yes, but on paper - not a chance.

Early on we had heard about an Epson emulator called Laserbrain, written by DMC (the Calamus people) in Germany. We also heard that Atari UK were going to distribute it here. Silica/SDL kindly sent us some sample printout from a 'pre-release' version including a screendump of a dialog box showing the version number, 1.0. They said Atari UK were holding on for the finished version, and hadn't decided whether to sell it or give it away free with each printer. So we waited...

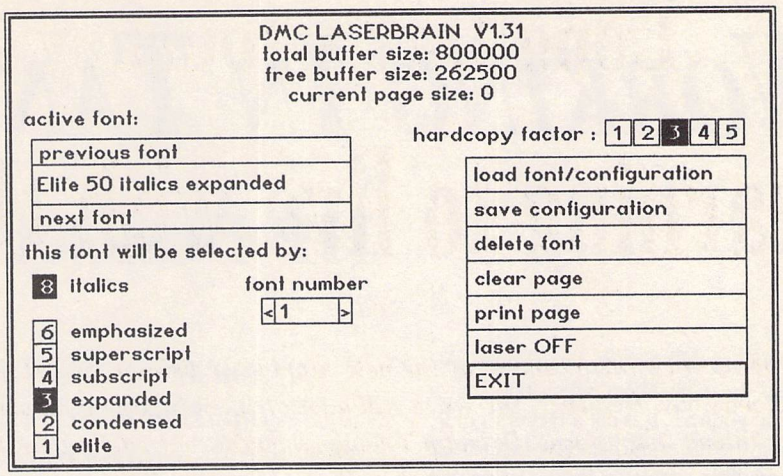
Emulating Godot?

...and waited. For almost a year. When the emulator was finally, graciously released by Atari for £29.95, we were not best pleased to discover that it was still version 1.0. Also, the supplied .CFG file for Wordplus was not fully compatible with the current version of the program. We wasted a day wondering why some of the typestyles refused to print properly before hitting on the idea of re-creating the driver from the .HEX file. Presumably, the supplied .CFG file had worked fine with the previous year's German version of Wordplus, as all the .HEX file comments had been left in their original language.

My admiration for the efforts of Atari UK increased even further when I found out soon afterwards that Atari USA had released v1.31 of the emulator as freeware! An American friend sent me a copy and we've been using it ever since. The documentation doesn't say 'not for use outside the USA', so I'm not too worried about being chased by lawyers. Version 1.31 of the emulator was also included on the cover disk of the October 1990 issue of STart Magazine. Apart from any bugs which might have been fixed, the American version contained a more complete font set.

Workers' Playtime

In use, the emulator has proved to be as good as can be expected, allowing for the vagaries of the ST's DMA channel. Screen dumps are superb and can be ordered in any of five sizes from postage-stamp to A4. When printing text, though, you have to watch it like a hawk. Every now and then it will playfully increase your left margin by a random amount for the rest of the page. From time to time it will decide it likes a particular paragraph so much that it would like to print it over and over again right down the page. And to make sure you're still awake it will occasionally, in the middle of a print run, throw up a 'Printer not connected' or 'General hardware fault' message. (To be fair, I think this is the fault of the DMA channel.) Pressing the 'retry' button at this point generally results in tears, so it's best to cancel and restart printing from the last successful page.



The emulator works by calling up a particular font from memory whenever your program selects a particular combination of typesize and style(s). So, with separate 300dpi fonts stored for pica, pica italic, pica bold, pica bold italic, condensed, condensed bold, etc., etc., it is easy to see that memory is soon eaten up and that you need to be selective about which combinations you want to allow for. If you try to access a font which is not catered for, the emulator tries to give you the nearest match, or, if it fails to find a close match, retreats into its shell and prints everything in its tiny default 'York 16' font. The easiest way to make this happen is to select the NLQ printing option in your word processor: all the supplied fonts are activated by selecting 'draft' printing, which causes no end of confusion for newcomers wanting to print presentation-quality documents.

When printing from the desktop, users are often puzzled to find that the last page of a document does not appear. The reason for this is that the emulator only sends a page to be printed when that page is full or when it receives a 'form feed' command. To force a half-full final page to be printed, open the desk accessory dialog box and select the 'print page' option. Easy once you know you have to do it.

Aside from programs like Calamus which install their own laser drivers, the other main mode of printing on the SLM804 is via GDOS, the part of the operating system that handles fonts and graphical output for a wide variety of devices. GDOS is a topic for a separate article and I'm not going to attempt to cover it here. The main point relevant to the Atari laser is that GDOS-based programs like Timeworks Publisher offer you the choice of printing from each installed font in two sizes: in ratios of 1:1 and 2:1. The scaled-up versions are likely to look jagged, even with the laser printer's high resolution, so it's worth making a note of which font sizes are actually installed.

To do this, look in the folder with your .FNT files and note down the file names. A filename such as LPDL10.FNT is a laser printer font (as opposed to, say, a screen font) from the 'Drury Lane' family whose size is 10-point. If only this file were installed, your program would offer you a choice of 10-point or 20-point printing. If you were to choose 10-point your text would be printed with a 1:1 correspondence to the font on the disk, while choosing 20-point would give you a scaled-up and slightly jagged-looking font. Whether this is acceptable depends on the design of the font (some scale up better than others) and the quality of presentation you need.

If Atari ever manage to release their new version of GDOS with scalable outline fonts, perhaps we will be able to consign all such restrictions to the dustbin of history where they belong.

UltraScript: ultra-scarce

I would like to say something about PostScript printing on the Atari laser using the UltraScript package - but I can't. UltraScript has been sold in the USA for some time but is not available in the UK unless you also buy Fleet St Publisher 3. Sadly, I doubt if we can look forward to future distribution, as I have just read on Z*NET that the publishers, Imagen, have stopped supporting it in the USA. This is a great shame as, apart from anything else, it would make the perfect companion for the Spectre GCR Mac emulator.

Perhaps other people can add their own experiences and tips to what we have learned? I may have dwelt too much on the problems we've had and the peculiarities of the printer and its software. It is worth saying, then, that our ST's and SLM804's have produced many thousands of usable pages leading to the creation of letters, memos, transparencies, research proposals, articles, books, doctoral dissertations, reports to government and industry sponsors - and even the occasional bootleg party invitation. We've learned a lot that we would have missed if we'd had to save up for more expensive hardware (and software). If only more people had done likewise, prices might have fallen faster and better software might have been written. But that, as they say, is another story.

WORKING IN TANDEM

HP DeskJet Plus & Atari ST

If you have a DeskJet Plus (or are thinking of buying one), Jon Ellis of Scisys Software reveals a wealth of practical information about this superb printer, which gives near-laser-quality printout at half the price.

In this article I will discuss some points you might like to think about when choosing a printer for your ST. It is not a buyers' guide, comparing the different printers, but rather a list of possible problems and how I solved those that cropped up in the integration of a DeskJet Plus into my ST system. I hope the general points will be of interest to anyone thinking of buying a printer, and that DeskJet owners will find the details useful.

Firstly, a word about the DeskJet Plus itself. This is an ink-jet printer capable of 300dpi resolution: laser quality output at a very good price. Indeed, the DeskJet Plus has been superseded by the new DeskJet 500, and many suppliers are cutting its price quite heavily as the new machine takes over. I bought mine from Evesham Micros for £400 including VAT. Much of the discussion in this article should also apply to the DeskJet 500. The DeskJet Plus has a superb inbuilt Courier font (6 and 12 point) with italics, bold and single or double underline. It can be driven from either the parallel or the serial port of the ST, and is extremely quiet and economical in operation.

Most ST systems probably started out with a 9-pin Epson-compatible dot matrix printer as their output device. These are cheap, readily available and widely supported by applications. Often, one can simply plug them into the parallel port, select the appropriate printer driver from those that came with an application, and start printing. Frequently, an Epson 9-pin driver will be the default. For other printer types, software compatibility is likely to more problematic.

Installation

The DeskJet Plus comes with a rather good manual which details clearly how to set the printer up, plug in the cartridge and power supply, etc. I recommend that you perform the self-test as described and examine the output closely. If you can see any white lines crossing the output, this is probably due to the cartridge not priming properly, leaving one of the ink nozzles inactive. Press the prime key and repeat the test. As for paper, I have found that photocopier paper works extremely well. This is usually sold in blocks of 500 sheets and is inexpensive. Some photocopier paper is one-sided with instructions on the packaging saying which side of the sheet you should print on first. I have never found that this makes any difference with the DeskJet.

Hardware compatibility

As already mentioned, the DeskJet can accept either serial or parallel input. The ST is well-known for having problems with its serial port support. These are purely software problems associated with bugs in the BIOS routines which implement handshaking. Under TOS 1.0, these problems preclude the use of hardware (CTS/RTS) handshaking. I am told the situation is better with TOS 1.4. Fortunately, there are several public domain fixes for this: TURBOCTS by Bill Penner (ST Club PD disk DMG.18) is one which is readily available. The DeskJet will operate at 1200, 2400, 9600 and 19200 baud (DIP switch selectable). The word length and parity are also selectable, but numbers of start and stop bits are fixed (1 start, 1 stop). The required parameters can be matched on the ST with the Control Panel accessory (or a combination of Install Printer and VT52 emulator). One set-up which I have found to work is 9600 baud, no parity, 8 bit words, 1 stop bit. Figure 1 details the cable required.

Both the ST and the printer can communicate at 19200 baud, which would be faster than the parallel port. However, it appears that there is something in the TOS 1.0 ROM boot code which results in the DeskJet receiving a few bytes of garbage as the ST boots up. These do not seem to be recognised at 9600 baud, but at 19200 baud the DeskJet responds by printing a character or two and performing a form feed. This is most annoying, and I have found no way of stopping it. I suspect that it cannot be prevented in software as it seems to occur before the disk boot begins. Therefore, 19200 baud is unlikely to be useful unless the printer is turned off while the ST boots.

The parallel port is the usual port to choose for a printer, as it requires no setting up and the cable is standard. However, there are problems associated with the DeskJet Plus and the ST parallel port. It appears that the ST parallel port is rather under-powered compared to many other computers. The output lines are driven directly from the sound chip, without any buffering. These lines are not able to sink as much current as is required by some printers, resulting in marginal logic levels (occasional garbage) and, very occasionally, damage to the ST sound chip. Difficulties only seem to arise when the printer is being driven flat out (e.g. 300dpi graphic dumps). Apparently, the older DeskJet does not suffer from this, probably because it is slower. I do not know about the DeskJet 500, but I imagine it behaves like the Plus.

There is a rather more concrete problem with the DeskJet Plus and the ST, with regard to powering up. If the printer is switched off while the ST boots, and then subsequently turned on, it will not be recognised by the ST. The printer must already be on before the ST is switched on. I am told that this behaviour is related to the unbuffered outputs mentioned above. This can be fixed in software: the program DJRESET.ACC (ST Club PD Disk PTR.11) will re-set the parallel port so that the printer is recognised.

This behaviour is rather atypical: hardware considerations should not play a prominent role in the selection of most printers. Most printers should just plug into the parallel port with no problems. My solution to the DeskJet Plus behaviour was to build a small hard-

ware buffer for the parallel port and to plug the DeskJet into it. This has worked perfectly for several months now.

Software compatibility

Most dot-matrix printers support an Epson-compatible command language. This specifies which escape codes must be used to select printer features such as bold, underlined and graphics modes. The DeskJet language is a subset of that used by the HP LaserJet, and is fundamentally different from the Epson standard. Accordingly, any software which assumes Epson-compatibility will not work properly. This includes the Desktop Print Screen command (ALT-HELP). There are apparently some replacement routines for this function available as PD in the U.S.A., but I have not seen any here. Hewlett Packard do produce plug-in cartridges for the DeskJet (HP22707E) and DeskJet Plus (HP22707F) which allow the printer to emulate an Epson FX-80. These should allow the built-in Print Screen routine to work.

The DeskJet Plus is not a common printer amongst ST owners, and for this reason a lot of software does not support it directly. Perhaps the most important piece of software that you will need for any new printer is a GDOS driver. This is the program which translates the device-independent representation of text and graphics into graphics-mode commands for the printer. Most packages that require GDOS supply a 9-pin Epson-compatible driver (often called FX80.SYS). This will not work without the Epson Emulator cartridge referred to above. Timeworks has an HP LaserJet GDOS driver which does work, albeit slowly, with the DeskJet. In general, most LaserJet drivers will work, although there will be problems if the driver attempts to move the print position about the page arbitrarily. According to Signa, they can supply a driver for Signum: simply specify that you require this when ordering. Neocept market a specialist DeskJet driver in their TurboJet package. This is particularly designed for use with WordUp, and they do not support it for use with other GDOS programs. In fact, the latest version of TurboJet **requires** WordUp master disks in order to unpack the driver from its special archived format. This fact is not advertised. Since I am currently waiting for a copy of WordUp v3, I cannot report on the operation of their driver, although they claim it is fast.

The DeskJet can use any of the 300dpi fonts that are usually described as laser fonts. It can also use 150dpi fonts with an appropriate driver. One hint from experience: if, when trying to set up Timeworks, all the printed text is badly aliased and larger than you expected, the printer is being driven in 150dpi mode with a 300dpi font. The hard work setting up GDOS is worthwhile - 300dpi output is beautiful!

With regard to word processors, I have set up a printer configuration file for First Word Plus which works well. All of the European and Greek characters are implemented, and the Hebrew characters are used to provide IBM-style box-drawing characters. The only feature of the program that cannot be accessed is the ability to print graphics: First Word Plus assumes an Epson-style command language, and cannot easily be made to drive the DeskJet in graphics mode. I have sent the printer configuration file to the ST Club PD library. One of their disks (PTR.11) has some other DeskJet drivers, but I found none of them entirely satisfactory for my purposes. Users of other word processors should have little difficulty as long as there is a basic printer configuration facility (set codes for bold, underlined, etc.). The character sets within the printer are fairly similar to standard PC-compatible extended ASCII sets. Output is in the internal Courier font, and is crisp and business-like.

Overall, the DeskJet has integrated well into my ST environment, despite the Epson-compatible prejudices of much ST software, and the lack of any ST-specific information in the printer manual. I would recommend the printer to anyone who needs 300dpi output without going to the expense of a laser.

Note: see the PD Update in this issue for full details of the DeskJet Plus utilities available on disk PTR.11.

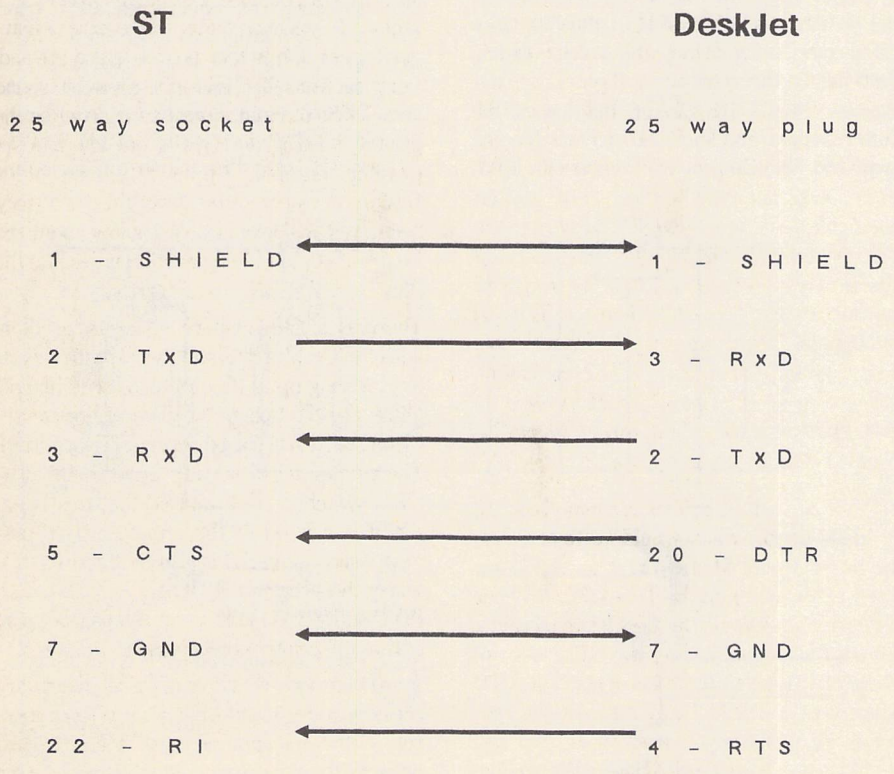


Figure 1

Layout of a cable to connect the ST serial port to the DeskJet Plus. The link between RI (ST) and RTS (printer) is optional. The DeskJet holds RTS high as long as it is turned on. By writing a custom interrupt handler, you could use this connection to check whether the printer is turned on. Also, the connection between RxD (ST) and TxD (printer) may be omitted if you will never use the printer status enquiry commands.

The LaserFace

The Atari laser printer uses a lot of wattage even when at rest, and its cooling fan makes a lot of noise. If you would like a more hi-tec solution to these problems than the one used by the ST Club office - a jiffy bag propping open the rear cover - then Derryck Croker has the answer...

One of the hardest things about ownership of the Atari SLM804 laser printer - apart from the cost - is finding that the computer will not boot from disk (floppy or hard) unless the laser is switched on first. That means either a deafening noise from the cooling fan (together with around 400 watts of power consumption) or the fiddly business of propping the rear cover of the laser open with some suitable object.

The reason for this can be found in the SLMC804 controller that converts data from the ST into the signal that drives the laser's video system. The controller plugs into the unbuffered DMA (Direct Memory Access) port and is powered by the laser, and since disk access is also performed via DMA, an unpowered controller will disable the drives. All the laser's systems and the controller are powered with the rear cover down (except for the fan and the fuser roller heater), hence the success of the propping method. And don't expect that the recently announced SLM605 laser will offer a cure for this problem - it apparently uses the same controller.

I had long been unhappy with this method since I felt that the continued opening and closing of the cover would lead to broken or worn hinges; also, the propping agent always seemed to fall out, leading to the laser breaking into noisy life at the most inopportune moment. So I looked into the possibility of powering the controller separately. A preliminary test with a "back to back" arrangement, consisting of a "D" plug and socket connected with ribbon cable, convinced me that the only requirement was for 5 volts to be fed to the controller. Of course, once the laser has been powered up, it would be best to leave it powered, cover propped, for the remainder of the session, since its life may be shortened by repeated powering up. Now enter the LaserFace.

LaserFace (now in its Mk2.3 guise) simply plugs into the laser/controller chain. The 5-volt supply from the laser is left unconnected and comes to no harm, as the 'Face provides all the nourishment that the controller requires. There are two versions of the 'Face, a simple "no frills" model that may be built by just about anybody who can use a soldering iron, and an advanced version that provides remote indication of fault and busy conditions. This has the dual advantages of allowing the laser to be sited where the front panel status display cannot be easily seen, and allowing the controller to be sited out of the way. The busy display option requires that the controller box be opened and a wire link be soldered between two pads. This may be an opportune time to introduce a disclaimer. Neither the author nor ST Applications can be held responsible for any damage caused to an ST or any of its peripherals or to the person as the result of the building or usage of the 'Face. Parts of the 'Face are at mains potential and so care should be taken. You should also bear in mind any possible difficulty with your guarantee when using the 'Face.

About the 'Face

The 'Face was designed to be as cheap and easy to build as possible, and to this end uses a ready-etched and drilled PCB for the power supply from Maplins. Maplins operate a quick and reliable mail order service, and so I have listed their catalogue numbers for the components. In particular, the multiway cable specified matches the colour coding described in this article.

Figure 1 shows the circuit diagram of the power supply and the LED drivers for the fault and busy indicators. Components BR1, C1, REG1, C2 and C3 provide a rectified and regulated supply of 5 volts for the controller, and LED1 provides a visual display of power on, with R1 dropping the 5-volt supply to the required 2 volts. The UA7805 regulator chip provides short circuit and overload protection, and is run well within its design current of a maximum 1A. Current consumption of the controller with all three LEDs illuminated is in the region of 360mA. These components, together with F1, SW1 and the transformer T1, form the basic 'Face. The full output capacity of the regulator can be realised by connecting the transformer secondaries in series, perhaps to drive another project.

The advanced 'Face adds R2, TR1, R3, LED2, R4, TR2, R5 and LED3. The laser's fault logic gives a low on pin 9 of the connector, and this drives the base of TR1 low through current limiter R2, thus switching the transistor on and illuminating the LED, with R3 forming its voltage dropper. The 'Face will provide indications of paper out/jam, tray open, rear cover open, and (I hope) toner out - the latter has not been tested, as my hopper is full! The busy signal is derived from the controller, and its logic works in the same fashion. Fault indication is provided by an additional wire connected to pin 9 of the 37 way "D" plug PL1 within the 'Face, and

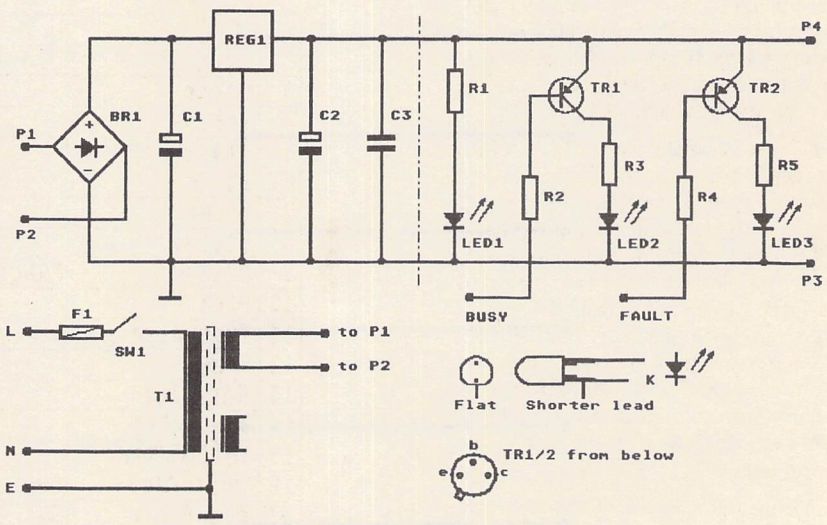


FIGURE 1: The circuit diagram for the 'Face.

Components to the left of the dotted line are constructed on the PCB.

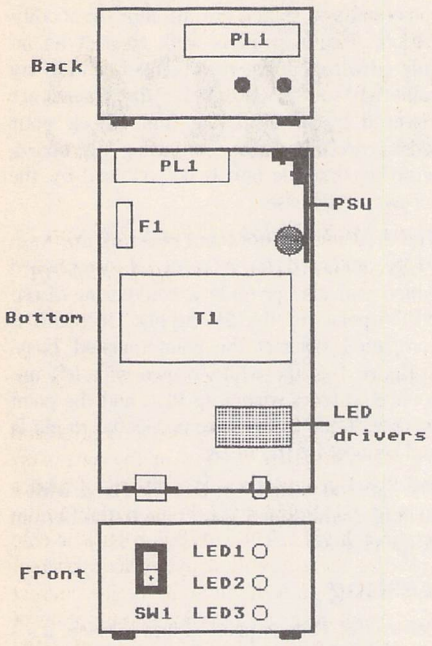


FIGURE 2: Laying out the components in the chassis.

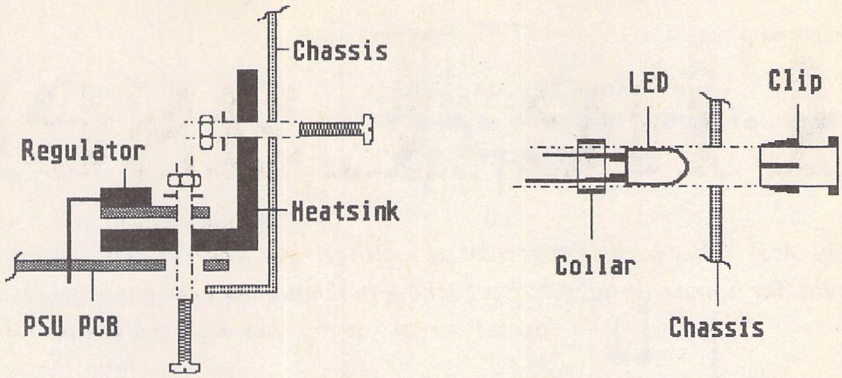


FIGURE 3: Mounting the regulator, heatsink, PCB and the LEDs in the chassis.

the busy indication by way of an unused wire within the multiway cable connected to SK1. Adjustments to the brightness of the LEDs may be made by increasing the respective resistor's value if required.

Construction

Both 'Faces are started by drilling and cutting the chassis to take all the mounted components. Figure 2 shows a suggested layout to suit the chassis specified. No dimensions are given since much will depend on individual requirements. You will, of course, need to drill only one LED hole for the basic 'Face. Take care when marking out the rear panel since there is little room to spare, and keep the protective film on until drilling is complete. The plug PL1 is mounted using the jack posts, which provide threaded holes for the laser lead's socket finger bolts to secure to. No ventilation holes are required, unless the full 1A capacity is needed.

Build the power supply on the PCB, which has the components designated in figure 1 silk-screened upon it, referring to figure 3 for details of the assembly of the regulator chip, PCB and heatsink. Components to the right of the dotted line are mounted separately. Be careful not to bend the regulator's wires too close to its body, and you may want to add a smear of heatsink compound between the chip and the heatsink. Push pins P1-P4 home with the aid of a hot soldering iron, and finish by insulating the rear of the board with tape.

Strip back the outer sheath of the multiway cable for a few inches and connect all the wires to SK1, carefully following the colour coding of figure 4 and the pin numbers embossed on the socket, and ticking off connections as they are made. This is a lengthy business and is best achieved with an automatic wire stripper and a fine bit. Keep the bared ends as short as is practical and take care to avoid the possibility of short circuits. Since the cable has only 36 wires, I have rather arbitrarily ignored the connection to an unused pin (33). Some pins marked as unconnected in the laser's manual have connections within the controller, so keep to the suggested wiring scheme! Double check before assembling the socket into the hood using the supplied strain relief clamp and finger bolts. Don't be tempted to extend the cable's length: results cannot be guaranteed even though the cable has an overall screen.

Feed the free end of the cable through the gland nut and chassis before repeating the wiring operation on PL1, again referring to figure 4. This time, however, leave the wires marked 5V unconnected - these are 16, 17, 35 and 36. If the advanced 'Face is being built, leave the wire marked busy (31) unconnected and connect an additional piece of wire to pin 9. Otherwise connect the busy wire to pin 31. In both cases, connect an additional wire to pin 21 (ground).

Assemble the remainder of the components into the chassis (figure 3 shows how the LEDs and the PSU are mounted), and complete the wiring. Bend the fuseholder's tags up carefully before securing, and sleeve all exposed connections for safety and to avoid the possibility of short circuits. Connect the free end of the wire connected to pin 21, together with the multiway cable's screen, mains earth and the PSU's negative output (P3), to a solder tag bolted to the chassis. If the basic 'Face only is required, then connect the 5V wires together with a length of wire and thence to the positive output of the PSU (P4) and R1. Connect the free end of R1 to the anode of LED1, noting the polarity of this component shown in figure 1. The cathode of the LED can be connected to any convenient earth point. That completes the basic 'Face, and the non-advanced 'Facers among you should now move to the section marked "Testing".

The Advanced 'Face

Before continuing with this version of the 'Face, unplug the controller and remove the circuit board from its case. Turn the board upside down and identify the points marked 31 and K from figure 5. This diagram shows only enough pads and tracks to make identification easy, but if you cannot locate these points (or pin 31 has a track connected to it),

1	Red			20	White/Blue		
2	Blue			21	Blue/Black	GND	
3	Green			22	Orange/Blue		
4	Yellow			23	Yellow/Green		
5	White			24	White/Green		
6	Black			25	Orange/Green		
7	Brown			26	Green/Blue		
8	Violet			27	Grey/Blue		
9	Orange	FAULT		28	Green/Black		
10	Pink			29	Grey/Green		
11	Turquoise			30	Yellow/Brown		
12	Grey			31	White/Brown	BUSY	
13	Red/Blue			32	Brown/Black		
14	Green/Red			33	UNUSED		
15	Yellow/Red			34	Grey/Brown		
16	White/Red	5V		35	Yellow/Violet	5V	
17	Red/Black	5V		36	Violet/Black	5v	
18	Red/Brown			37	White/Violet		
19	Yellow/Blue						

FIGURE 4: Follow this wiring chart carefully when wiring the plug and socket.

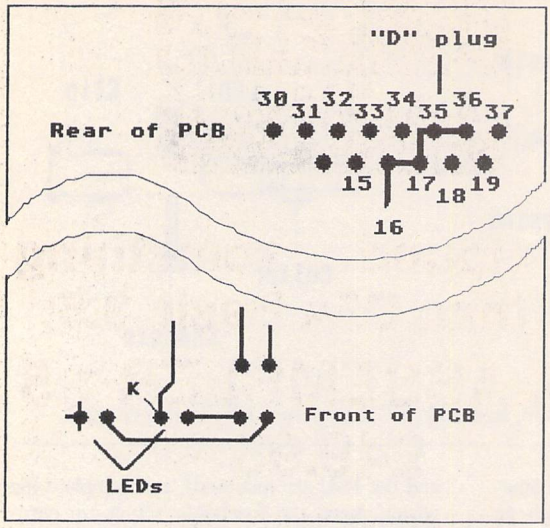


FIGURE 5: Find the connection points for the busy option with this view of the track side of the controller PCB.

COMPONENTS

No.	Catalogue		Description	Quantity	Price
F1	WR05F		Fuse 20mm Q/B 2A	1	0.08
	RX49D		PCB Fuse holder	1	0.16
T1	YJ50E		Min Tr. 0–6 0–6 1A	1	5.25
BR1	QL38R		Bridge Rectifier	1	0.32
REG1	QL31F		Regulator 5V 1A	1	0.56
TR1/2	QB53H	*	BC178 transistor	2	0.64
LED1	WL28F		LED green	1	0.15
LED2	WL29G	*	LED orange	1	0.16
LED3	WL27E	*	LED red	1	0.12
C1	FB91Y		2200uF 50V axial	1	1.10
C2	JL10L		10uF 63V PC	1	0.10
C3	BX03D		0.1uF disk	1	0.16
R1	M560		Min resistor 560R	1	0.03
R2,4	M10K	*	Min resistor 10K	2	0.06
R3,R5	M560	*	Min resistor 560R	2	0.06
P1–4	FL21X		Pin 2141 (pack 100)	1	1.20
	YQ40T		0.5/1A reg. PCB	1	1.28
	HQ81C		8W Hi–Fi heatsink	1	0.86
	YY40T		5mm LED clip	1	0.05
	YY40T	*	5mm LED clip	2	0.10
PL1	FV71N		37 way D plug	1	0.98
SK1	FV72P		37 way D socket	1	1.65
	JB66W		37 way D hood	1	0.98
	FP31J		D connector jack posts	1	0.42
	XR54J		Multicore 36W (1 metre)	1	1.65
	XR01B		Min mains (per metre)	?	0.24
	JR76H		Cable gland	1	0.48
	LR48C		SR grommet (min mains)	1	0.08
SW1	YX64U		SPST rocker switch	1	0.68
	LF16S		Box AB24	1	2.05
	FD75S		Square stick on feet	1	0.42
			Postage and packing		1.00
			Total:		**£23.07**

* Components marked with an asterix are only required for the advanced 'Face. Additional items such as nuts and bolts, Veroboard, etc., are assumed to be normal constructors' aids and so are not included in this list. The Maplins catalogue is available from either WH Smith or Maplins at £2.45. Credit card sales: 0702 554161.

then your controller is a different one from mine and you should not attempt the modification. Assuming all is well, connect an insulated wire link between points K and 31 by soldering to the pads only: the tracks are covered by an insulating film. Check your work carefully before re-casing the board, ensuring that the link is not trapped by the screws or the case.

The driver transistors and resistors are most easily mounted on a piece of Veroboard which will also provide a convenient distribution point for the 5V supply. Once this is completed, connect the point marked 'busy' in figure 1 to the white/brown wire left unconnected from wiring up PL1, and the point marked 'fault' to the wire connected to pin 9, and connect up the LEDs.

The finished board can then be fixed with a strip of double-sided foam tape to the bottom of the chassis.

Testing

Before the 'Face is pressed into service, it's a good idea to re-check the connections between the plug and socket against figure 4 to ensure that the pins are connected correctly and with no short circuits. Fix the 'Face's cover with the supplied screws before plugging into the mains and switching on - LED1 should illuminate. Check for 5V between pins 21 and 15, 16, 35 and 36 on the socket. The advanced 'Face's busy LED may be checked by shorting pin 21 of the socket to pin 31, and the fault LED by shorting pin 21 of the plug to pin 9. In both cases, the appropriate LED should light on shorting and extinguish when the short is removed.

Using the 'Face

Plug the 'Face into the laser/controller chain and it is ready for use! The switch on sequence is exactly the same as before: just switch the 'Face on before powering up the computer. Keep the 'Face clear of stray disks and monitors, since it is housed in an aluminium case and there will be stray magnetic fields. All operations are carried out as before, but in blissful peace with the laser completely dormant. And is it compatible with all programs that use the laser? Out of all the programs that I tried, the only one that required special treatment was WordUp, which needed the laser on, albeit propped, before loading. An odd effect of the 'Face is that a powered laser will eject a sheet of paper if the 'Face is switched off first. Finally, the advanced 'Face will not provide indication of the laser not reaching its ready state, since fault conditions are not supplied until it has warmed up. Enjoy.

Footnote:

The ST PSU has got over half an Amp spare even in a Mega ST, so why not use it for the 5 Volts? No need to make up a PSU which has to be turned on - just run a +5V wire from the ST to the controller box.

Paul Rossiter

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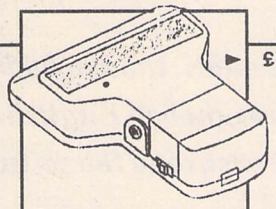

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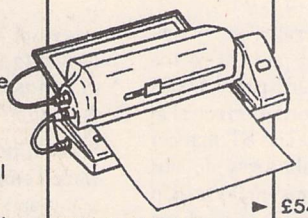

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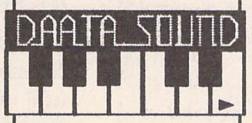

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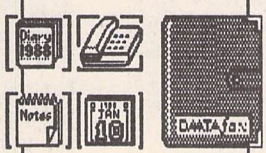

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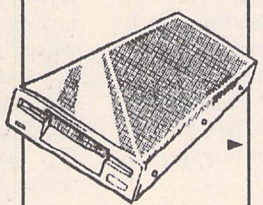

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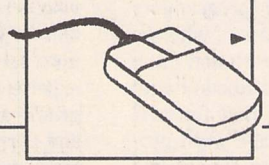

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STICKS AND STONES

Günter Minnerup's target this month is software manuals, those maddeningly misinformative tomes that, strewn as they are with jargon and downright bad English, all too often succeed in lifting only the corners of the veils of mystery that enshroud the software they accompany.

The big day has come. After years of pre-release hype, several "exclusive" previews of beta test versions in the glossy mags, and countless "real soon now" replies to your enquiries as to its actual availability, the long-awaited HyperSuperMegaProg Professional finally lands on your doormat. On your doormat, because the absence of any good dealers within a radius of 400 miles has forced you to go mail order like everybody else. Be that as it may, the fact is that at last you hold said HyperSuperMegaProg Professional in your trembling hands - so what do you do next?

I am told that most people proceed to rip off the shrink wrapping, tear apart the cardbox case, fling the manual and registration card into a corner and shove the disk (or a hastily made backup copy) straight into the nearest drive slot. But I just cannot believe that the majority of my fellow computer users really go about things this way. For me, the greatest pleasure on receiving a new software package is to sit down and read the manual. Not necessarily from beginning to end - I don't need to be told any more what double-clicking means, and error messages bore me to tears - but with a definite sense of discovery and anticipation. For a precious hour or two, the new program is the answer to all my prayers. More often than not, it is the only real pleasure it will ever give me.

Up to this point, every manual is a good manual because it has not as yet been called upon to do what a manual is actually supposed to be there for: to help you make the most of your software. Once I get to the point of using the software in earnest, the good read almost inevitably turns out to be a bad companion. "Almost inevitably" - I have chosen my words with care, for the truth is that, a few honourable exceptions apart, the general standard of the documentation supplied with ST software is little short of scandalous. (Come to think of it, it is even worse for hardware - I've seen hard disks, scanners and memory expansions come with little more than photocopied typescript, and Atari themselves don't set a very good example with those glossy but virtually useless ST handbooks - but the state of the hardware market provides sufficient ammunition for another month's column...)

PC and Mac owners are generally better served in this respect, and they also have the benefit of a vast range of third-party books explaining how to make Word Perfect sing and Adobe Illustrator dance. The ST market is so much smaller that publishers do not bother to commission volumes on WordUp or Megapaint, and even fewer bookshops stock the half dozen or so titles which are available. ST users are therefore dependent on what the software houses provide them with, and they are generally short-changed.

To be sure, the laws of the marketplace apply to software houses as much as to book publishers; so, do the lower profit margins for ST programs not dictate a correspondingly smaller expenditure on documentation? This is true, up to a point, and I would be the last to expect an ST word processor to come with a manual as lavish as, say, Word Perfect 5. But there is a point where the saving becomes false economy, and this point is perhaps best illustrated by the piracy issue: if manuals are supposed to be an incentive to fork out for the original package, it must surely be in the interest of the software publishers to ensure that the documentation really is an indispensable aid to getting the most from a program, rather than a mere makeweight of dubious practical value.

Size isn't everything, as they say, and although the physical production costs come into the equation, the largest manuals are not always the best (ask any Calamus user). Crude, page-counting penny-pinching can be found in the PC and Mac worlds, too, and is not a preserve of - although certainly more common in - the ST market. But the ST scene does seem to suffer from two specific afflictions in particular:

First, because so many ST software houses are very small concerns, the programmer often also writes the documentation, with the inevitable disdain for plain English and user-friendliness. Too many manuals abound with jargon words, which may be fine for a C compiler, but what is the average word processing typist to make of flags, strings and tokens? Then there are the long lists of commands, without tutorials and examples showing you how to use the associated functions to best effect. Why do art packages, for instance, not include sample pictures at various stages of completion which enable the new owner to understand the marvellous powers of those blandly described Boolean operators?

Second, because so much powerful ST software comes from abroad, particularly Germany and more recently France, we have to contend with translations in which hilarity and obfuscation replace information and clarity. One major German import insists on referring to hard disks as "rigid platters", while a French MIDI package advises me that "if WIDTH is ON, the line points number is transmitted following the specified chain". Such gobbledygook is an insult to the buyer and could be so easily avoided by someone reasonably computer-literate, or even merely literate, doing some last-minute proof reading. The Managing Director would do, in most cases...

Not surprisingly, therefore, the best manuals tend to come with British software, and from the larger, more established publishers with the resources to pay someone for editing them: Superbase, Protext, Fleet Street Publisher spring to mind. So why not resolve to stick with such sources in future and avoid box-shifting importers and one-man bands? Unfortunately, the ST software market does not work like that. Larger companies are conservative by nature, preferring to avoid risks, so that much of the new, exciting stuff enters this country through previously unknown, untried and untested channels. To make the most of your ST and expand your horizons beyond the familiar applications, you simply have no choice but to send off the occasional cheque to dodgy box-shifters, tiny back-bedroom outfits, and foreign shores.

Perhaps the remedy lies with the magazines whose reviews many of these vendors, unable to finance much advertising, must rely upon for publicity. Computer journalists are experienced at coming to grips with new programs and tend to concentrate on features and performance rather than documentation. How many reviews give the manual more than a passing mention? More severe criticism of the inadequate, as well as more generous praise for the exemplary, may well have the desirable effect of raising general standards.

PD UPDATE

Version 11.3

February 1991

Fonts

FON.47: CAMELOT GEM fonts in 14, 18 and 36 point at 90dpi (High Res mono) and 300dpi. (DS:M)

FON.48: CAMELOT GEM fonts in 12, 15, 24 and 30 point at 90dpi and 360 dpi. (DS:M)

Camelot

FON.49: MAC2GDOS Fonts: a selection of bit-mapped fonts converted into GEM format from Mac fonts. Most of these fonts are screen resolution (~90dpi). In order to use these fonts in GEM GDOS applications you will need to use a suitable font editor (such as Fontkit Plus) to generate printer fonts, or scale them by point size and then generate new screen fonts. The fonts are: Big and Tall 13; Calligraphy 14, 29; Keys (Amiga keytops) 13; Hi-Tech 10, 21; Alexis 24; Chicago 9, 12, 18; New York 9, 10, 12, 14, 18, 20, 24, 36; Geneva 9, 10, 12, 14, 18, 20, 24; Monaco 9, 12; Venice 15, 26, 30; London 18, 36; Athens 18; San Francisco 18; Cairo 18, 24; Los Angeles 12, 24; Math 14; Times 9, 10, 12, 14, 18, 24; Helvetica 9, 10, 12, 14, 18, 24; Courier 9, 10, 12, 14, 18, 24; Symbol 9, 12, 14, 18, 24; Mobile 24; Future 9, 12, 18, 24; Bubbles 14, 24; Elvish 12; Greek Characters 13; Hollywood 26; Lothlorien 16; Stencil 12, 24; Camelot 14, 18, 36; Tokyo 18. (DS)

Games

GAM.156 and **GAM.157:** Two more SEUCK (Shoot 'Em Up Construction Kit) vertically scrolling games: LAST CHANCE and MUTANT MINE. These are pretty simple games that would be ideal for young children. (C)

GAM.157: JIGSAW - creates a jigsaw from Degas, Neo and Tny pictures. (C)

GAM.158: PILE UP - very similar to Tetris - pile up the tiles - but marred by repetitive music and jerky mouse/joystick response ($STOS:C:DS).

GAM.159: CASINO KENO - gambling game, fairly similar to bingo. (C:DS)

Doubled Up

GAD*70: GAM.156 + GAM.157

Information and Text Files

INF.28: STANDARD LETTERS - over 700 standard letters and forms covering: Credit Collection, General Business, Employer-Employee Correspondence, Legal Matters, and Ordering and Selling. All originate from the USA - so will need a certain amount of modification. (DS)

ST News

Issue 44 - The last one:

MGN.44: Single sided disk A.

MGN.45: Single sided disk B.

MGN.46: The double sided version. (DS)

Not compatible with Rainbow/STE TOS versions.

Programming and Languages

LAN.97: DMAKE 3.6 - Level 1 patch of Dennis Vadura's very comprehensive MAKE distributed by GNU with full C source posting; plus GNU MAKE 3.54. Works well with the huge module links beloved of the GNU distributors! (DS)

LAN.98: PATCH 2.0 - program for applying a Diff file to an original - updates and maintains source code files easily; GNU DIFF 3.4 - ported from the PC version - supports context mode. (DS)

LAN.99: XSCHEME by David Michael Betz - an implementation of a programming language called Scheme, with extensions to support object orientated programming.

Utilities

UTI.96: STD CAT 4.3 Update - now includes CAT2ASC for converting STDCAT data files into ASCII lists.

UTI.139: GNU PLOT 2.0: Update: function plotter. (DS:$C)

UTI.150: Andy Osbourne 4: Astrology Programs: BURMESE - Burmese Astrology program for basic charts - the only Burmese Astrology program on any computer?; CHINESE - Astrology program - calculates the animal signs but does not have any interpretation - designed to go with the most popular Chinese Astrology book out (C); FORECAST - produces lengthy Horoscopes for mid-1991 - uses all the planets, not just the Sun.

UTI.151: MICRO RTX - the shareware version of MICRO RTX by Beckmeyer Development Tools. This is an operating system supplement which allows multi-tasking of TOS programs; it provides the system services necessary for implementing multi-tasking in your programs. Includes bindings for writing RTX programs in C. Programs using RTX have to be specially adapted. Included with this distribution is the complete MICRO RTX programming manual describing how to use MICRO RTX in your programs. GCC RTX - Micro RTX bindings for Gnu CC; SQRT - an example problem-solving multi-tasking program ($C); plus two articles on multi-tasking programming from ST World USA magazine.

UTI.152: NROFF1.1P - macro package for reading .MAN formatted documentation pages. ($C:DS)

UTI.153: EDHACK and DIARY v1.9 - Excellent editor which may be installed as an ACCessory or run as a program - comes in two flavours: a file editor DIARY; and EdHack which can edit anything - including disk sectors and memory; XXED - file editor with simultaneous Hex and Ascii display. (DS)

UTI.154: ARCHIVING Utilities: ARC2LHARC - archive switcher v1.02 - swaps between ARC and LZH archiving methods; ARCGSH32 - shell that greatly eases the use of well-known Archivers; supports: Zoo, Arc, LHArc, Shar, UUe and UUd. You can also access your favourite file viewer and editor directly from within ARCGSH; ARCSHELL v2.1b - another GEM shell for ARC and LZH - now supports ARC 6.02 sub-directory option; DESELF - removes the self extraction code from any self extracting LHARC archive file; DENCRYPT - encrypts disks to prevent access to contents; LHARC 0.4b and LHARC 0.5b by John Webb; LHARC 1.13b - another version of LHARC, written by the originator of LHARC, Haruyasu Yoshizaki; TACS - desktop-style shell for use with ARC; UNLZH v1.61 - very fast LZH archive extractor for use with any version of LHARC; ZOO 2.01 STE - TOS 1.4+ compatible update of the ZOO archiver on disk UTI.67. (DS)

UTI.155: PACKERS: collection of program packers to reduce the size of executable programs, includes: Auto 2.3, Cruncher, Happy, Jam Pack, LSD Pack, Packer1, Jam Pack 1.4, Jek Pack, Alt-Help, Compack, Medway, Thunder, VAT, ABS Pack, A H 2, DPack and DUnpack, FPack, Fun Pack, LSD Crunch and SFP Pack; ONE PART - Excellent utility which takes the files required by an application and puts them together into a single file - saves disk space and loading times - but is not guaranteed to work on all programs; SAM COMP - sound sample compressor. (DS)

Doubled Up

UTD*73: UTI.145 + UTI.150

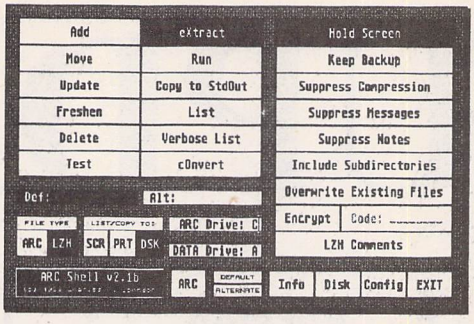
Word Processing

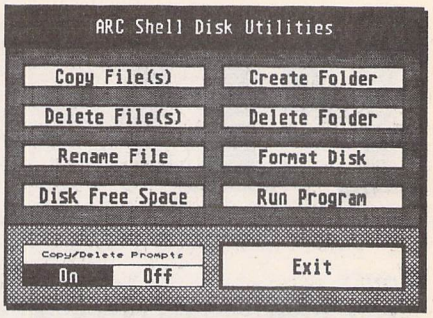
WPR.76: micro EMACS 3.10 Update: 2 levels of patches (mainly bringing in back-up file saving) and David Coe's adaption of Jaegermann's call_gulam hooks to by-pass MWC's flawed system() call. (DS)

WPR.77: GNOME - Generally Not the Original Micro Emacs - Moshe Braner's version of microEMACS - supports the editing of multiple files in multiple windows, just 55K with built-in Help, extensive support for function keys ($C); JOVE - Jonothan's Own Version of Emacs v4.9. ($C)(DS)

WPR.78: ED - line orientated text editor - similar to UN*X v7 ed ($C); ELVIS v1.3 - clone of vi/ex, the standard UNIX editor - supports nearly all of the vi/ex commands, in both visual mode and colon mode - like vi/ex, elvis stores most of the text in a temporary file, instead of RAM, allowing it to edit very large files; SEDIT V3.3 - screen editor with a keyboard layout similar to EDT. (DS)

WPR.79: STOS TYPING TUTOR - plenty of features quite well executed, allows: Practice Typing; Type a Document - can load documents for you to practice on; Keyboard Test - a simple keyboard reaction timer; plus options to set the Keyboard Speed and Delay. ($STOS)





Arc Shell Utilities on disk UTI.154

WPR.80: SHOW DVI - Show TEX DVI files, prints TEX DVI files, plus a couple of utilities for management of metafont pk files, and IMG files. ($C)

Doubled Up

WPD*44: WPR.75 + WPR.79

Printer Utilities

PTR.11: HP DeskJet (Plus and 500) Utilities: Updated disk - now double-sided. As well as a host of 1st Word (Plus) printer drivers, this disk now includes: ADDRESS - prints envelopes; COMPACT - prints a disk directory to a DeskJet or Laser Jet; DJETBOOT - Presets Deskjet into draft mode at boot-up ($C); DJDEGAS - prints Degas PI1, 2 and 3 files; DVI_DJ - TeX DVI printer driver; EPSJET v1.0 - Epson MX-80 emulator; FS_DJET - FSP1.1 and FSP3 printer drivers; JETLAB v1.1 - prints multi-column sheets of labels; JETSET - Desk Acc printer set-preferences utility; LASERJET - downloads soft fonts into the HP Laser Jet; PRINT OR SAVE - memory-resident program, which hijacks the ALT-HELP routine to offer the option of printing or saving the screen; SHEET - configuration file for Sheet (the shareware spreadsheet); STW_HPDJ - printer driver for ST Writer; ENVELOPE - Desk accessory envelope printer. (DS)

Disk Mag DMG.21

Contents:

ARCGSH32: Shell that greatly eases the use of well-known Archivers; supports: Zoo, Arc, LHArc, Shar, UUe and UUd. You can also access your favourite file viewer and editor directly from within ARCGSH.

AUTOCOPY: Copies files to a RAM disk at boot up.

BRAKCHCK: Bracket checker - checks source code files for un-paired brackets.

DENCRYPT: Encrypts disk so that data may not be accessed until they are de-encrypted with the correct key.

DESK_CHS: Choose required Low/Med/High Resolution Desktop.Inf file at boot-up.

GEM_CALC: Excellent spreadsheet from Germany - program and documentation have been translated into English. Incorporates lots of functions and can create graphics including pie charts, plots, and various types of bar charts.

GETITHR: Get It There - maze breaker game (Mono)

HP_DJ: Hewlett Packard Deskjet utilities: DJ500 - 1st Word (Plus) driver for DJ500; DJMORE - 1st Word and Calamus plus 75/100/150/300 dpi screen dump utilities; DJPLUS - 1st Word Plus driver by Jon Ellis - as mentioned in his article in ST Applications.

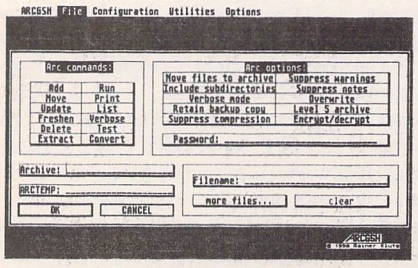
LGS18B: Little Green Selector v1.8B - replacement Item Selector - now compatible with CodeKeys and the TT.

LHARC060: File compression utility from DeltaVision Systems - 25% to 35% faster than v0.51 and now allows user-defined text to be displayed before a file is un-archived.

LINK3: Line Noise Killer - does automatic error correction of RS232 data - offers many of the advantages of a MNP modem - without the cost!

LOADPC1: GFA Basic source code for loading PC1 files - as mentioned in the GFA Column in issue 2 of ST Applications.

MATHMAZE: Arithmetic is fun! game for children - very nicely executed. (Mono or



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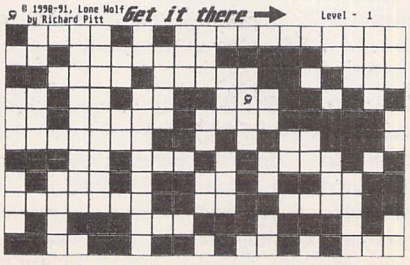

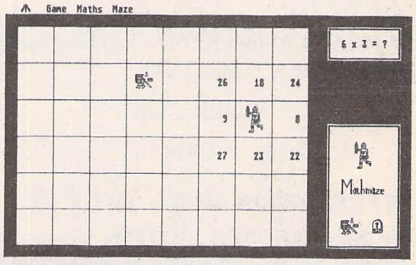

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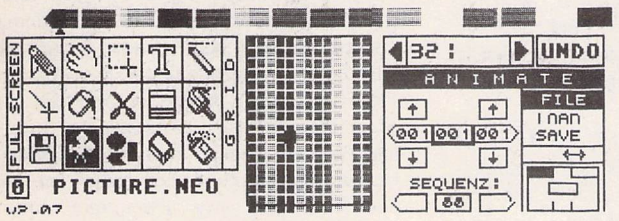

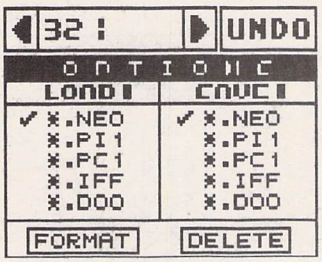

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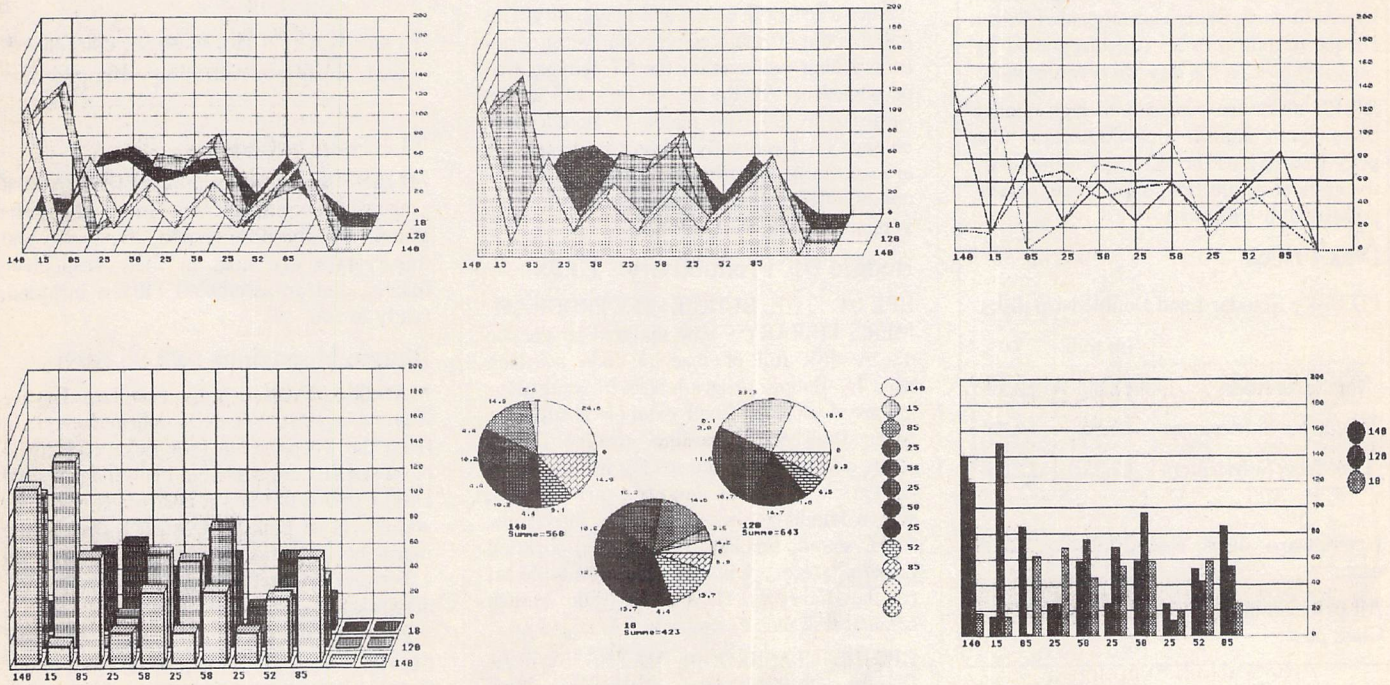

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	up to 6	7+
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Licenseware Update

These disks are all Licenseware: only authorised distributors are allowed to sell these disks. You are free to copy them, but not to to sell them. Licensed Distributors pay a fixed royalty for each disk sold, and all of this money goes to the Budgie authors. The ST Club was the first PD service to join the Licenseware scheme, and with the exception of one quarter we have been the largest contributor of royalties to the authors of these programs.

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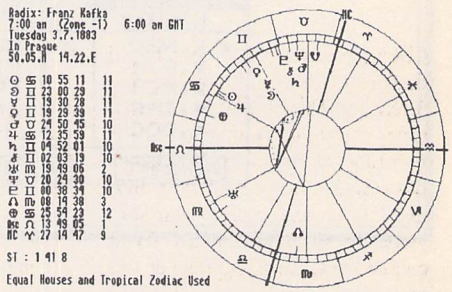

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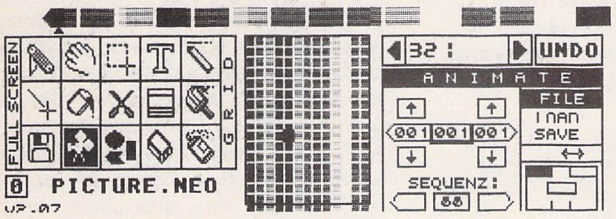

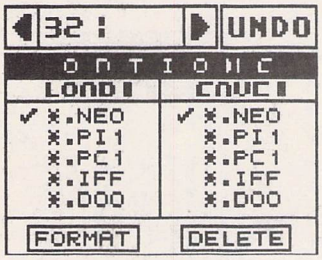

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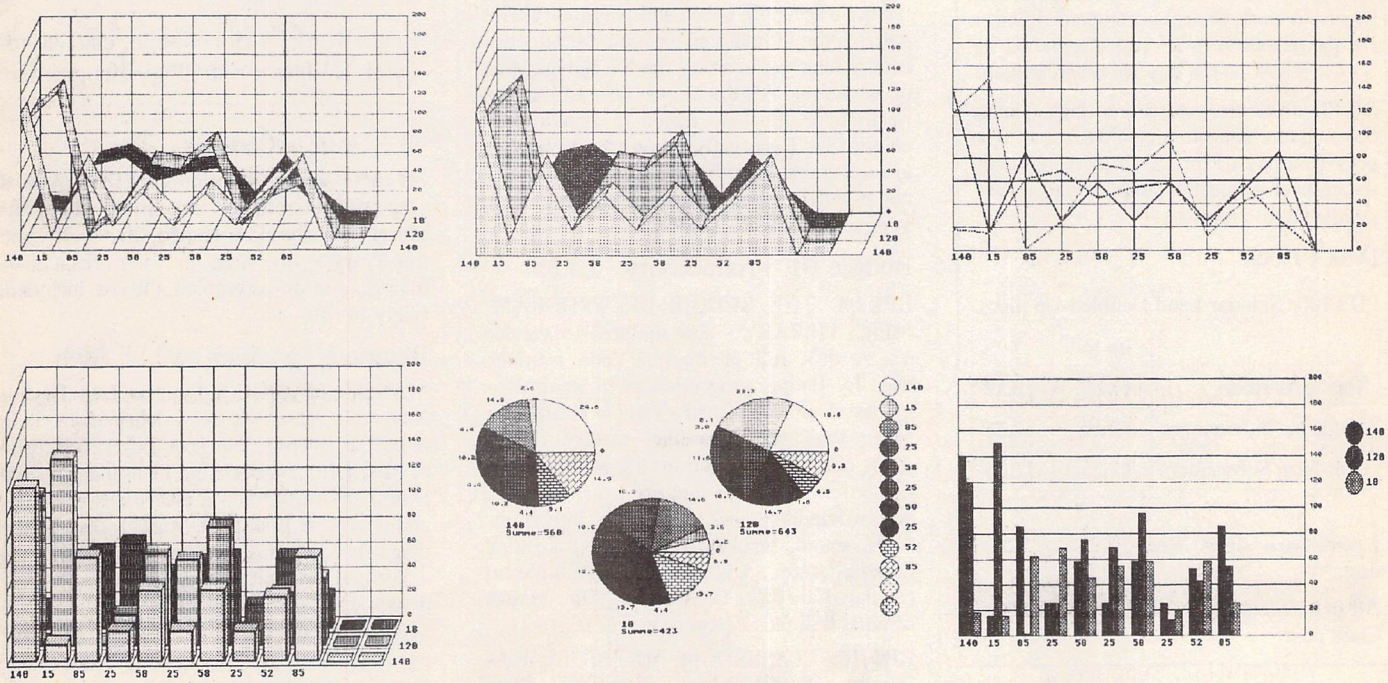

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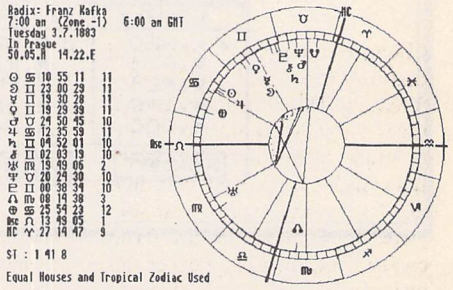

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On-line Conferencing

```
Type 'cix' to login: qix

CIX  Version 1.307.3  23/8/90
You are on line: tty18
Nickname? (Enter 'new' for new user) irobinson
Password:
You have 1 mail message(s) in your in-basket.
You are a member of 23 conference(s).

Conf/Topic                New Messages
atari.st/listings            1
atari.st/questions           1
stworld/reviews              1
mac/files                    3
atari.st.olr/general         1
atari.st.olr/bugs            1
cix/news                     1
cprog/compilers              4
cprog/general                4

TOTAL NEW                   17
echo Type HELP<return> for help ???

M:file read all
<More>
```

It's hard to read a computer magazine these days without finding some reference to CIX. The term CIX is an acronym of Compulink Information eXchange *and is pronounced "kicks". So just what is it? Ian Robinson explains.*

CIX is a commercial bulletin board that uses a system known as conferencing. This does not mean that users chat to each other on-line in real time, although this is possible, but rather that the system is divided into areas for particular subjects. These areas are known as conferences. An advantage of this method of organisation is that you only join the conferences that interest you and therefore don't have to wade through unwanted material. The choice of conferences on CIX is huge, with many subjects, both computer and non-computer related, having either a full conference or a sub-topic within one.

What does CIX offer the ST user?

The ST is well served on CIX with many conferences that are extremely active. The main ST conference is sub-divided into several sections such as questions, hardware, Midi and listings. The listings topic has about 400 PD programs available for downloading. Other ST-specific areas are a programming conference in which you can receive (or pass on) programming tips. The alternative desktops, Neodesk and Gemini, also have a conference in which there are lots of custom-made icons available. If your ST has one of the many emulators installed, then there are large conferences for both the Macintosh and PC compatibles. Recently, the ST conferences have been full of a heated discussion regarding the future of the ST/TT range in light of the price reductions across the Apple Macintosh range.

Getting your CIX

Many companies use CIX on a regular basis, and this is a good way to get product support, usually from the actual program author. Of the companies who produce products in the ST sector, both Hisoft and GFA run their own conferences. The Hisoft section is very good with queries usually being answered within twenty-four hours (at the outside). People from Arnor and Frontier are also regular users of the system.

Life after computers!

CIX is not exclusively computer-orientated. Almost any subject you can think of has either a dedicated conference, or a sub-topic within one. A full list of conferences is available on a special CIX disk from the ST Club.

So, how do you join CIX? Well, obviously, you have to have a modem and suitable comms software! The PD program Uniterm is ideal for this purpose. Once you have your modem, etc., set up (use 8 data bits, 1 stop bit, no parity, full duplex), then you are ready to go. There is a £15 joining fee for CIX, a one-off fee which you pay by credit card on-line. To join, dial the number 081 390 1244 and type **cix** at the first prompt. This will display the welcome page. When asked for a nickname, enter **new** and you will enter the registration section.

Apart from the registration fee of £15, which is paid only once, the charges for CIX are £2.00 per hour at cheap rate times and £3.10 per hour at peak rate. Of course, the cost of dialling the London number has to be added to these figures. As a rough guide, it costs me £3 per hour at cheap rates to dial from Belfast. It might cost slightly more or less depending on where you dial from. These charges may seem large but they can be kept to a minimum by only logging on at cheap rate times and also by using a program known as an off-line reader.

As the name suggests, the off-line reader (OLR) allows you to read all of the messages after you have logged off. It also lets you reply to the messages off-line. This results in a tremendous saving. The OLR allows you to log on, copy all of the new messages into a file, archive the file and download it, and then log off. This usually only takes a few minutes, after which the messages may be read at leisure while no charges are being incurred. Replying to messages involves uploading a file which is executed as a macro that sends all of the replies to their destination. Again, this only takes a few minutes. A regular CIX user, Kevin O'Donovan - known on CIX as kebab - has written an OLR for the ST. This exists in two forms, a cut-down version which is free, and an enhanced version which is available for £15. The cut-down demo version is available from the ST Club.

CIX is an amazing information resource that can quickly become essential. So, if you would like to add a new dimension to your computing, then join CIX now. Upon joining, you will only be a member of the CIX admin conference; at the main prompt you should type the following to join the stapplications conference:

join stapplications.

You can contact me by email from the main prompt by entering the following:

mail to irobinson

and then entering your message.

See you on-line!

Extracts from the CIX 'ST Applications' Conference

stapplications/feedback #8, from amp, 245 chars, Nov 3 18:12 90 Comments.
----------TITLE: Programming
Is there going to be any programming content in this mag? If so, are you interested in a series I wrote for ST World before they dropped programming? (I presume you're aware of the (awful) US mag also called ST Applications?)
==========
stapplications/feedback #9, from irobinson, 364 chars, Nov 3 21:31 90 Comment to 8. Comments.

Yes there is going to be programming in the mag. I'm sure that Paul would be very interested in your programming article. You should send it to him, either by post at the address given in message 7 or you can bin mail it to me and I will forward it for you.
I haven't heard of a US mag called ST Applications, but I will find out if the powers that be have.
Ian
==========
stapplications/feedback #10, from hisoft, 188 chars, Nov 4 17:59 90 Comment to 9. Comments.

I believe that the US mag called ST Applications `died' quite some time ago; but then again there's a US magazine called ST World (which is much worse than ST Applications IMHO).
Dave N.
==========
stapplications/feedback #23, from mel, 561 chars, Dec 10 19:38 90 Comments.

TITLE: Sticks and Stones
If current users of the ST are considering ditching it for MAC or IBM - which isn't surprising given the circumstances - how can we possibly expect to `recruit' new serious users. They don't have the problem of writing-off previous expenditure. I think what we really need are a couple of state-of-the-art applications not available on other machines. Software sells hardware. Do I think we will get them? No! I'm having to get a PC (spit) emulator because I simply can't get the software for the ST.
Like the Mag!
-Mel-
==========
stapplications/feedback #25, from gminnerup, 792 chars, Dec 11 00:22 90 Comment to 23. Comments. More refs to 23.

I can assure you that I'm not planning to ditch my ST - yet. The intro to the column was a bit of a teaser, but not entirely made up: my employer will buy me a computer to use at work soon (at the moment I have to make do with 286 PCs and a MacPlus...) and some months ago I would have expected to ask for a TT. Now I'm tilting towards the LC, but the race is still open... There are some very good applications indeed in the pipeline, especially in the DTP/WP/Graphics fields, some of which would make Apple blush. But I think that the days when software sold hardware are gone, unless something *really* revolutionary turns up. Why? Because the different hardware platforms are getting so similar in their capabilities now that any new idea is immediately ported across. Gunter Minnerup
==========
stapplications/feedback #27, from irobinson, 431 chars, Dec 11 18:08 90 Comment to 23. Comments.

I'd agree with your statement about software selling hardware. But the ultimate example of software selling hardware has to be the Mac interface and application software. The ST had an application that was not available for other machines - Cubase. This is now available for the Mac. That is what will happen to any unique application, it will quickly appear on other formats. What the ST market needs is a huge price cut.
Ian
==========
stapplications/feedback #28, from irobinson, 522 chars, Dec 11 18:58 90 Comment to 25. More refs to 25.

Save up your money for longer and get one of the Mac II range. They really are incredible pieces of kit. We got one into our Art department in work and I thought Happy Days - a Mac II to play with. Two weeks later the Art dept. moved into new premises half a mile up the road. 8-(.
That's definitely my future goal - a Mac II. On another point I phoned up the Apple development group today in Apple UK and the service was excellent. I've no direct experience of Atari Dev. support but it has a bad reputation.
Ian
==========
stapplications/feedback #29, from gminnerup, 289 chars, Dec 12 00:21 90 Comment to 25. Comments.

Atari dev support is supposed to have improved recently - they even have someone on CIX now! I'd be interested to hear from any developers what they think of recent changes: are Atari indeed getting their act' together at last? (Mail me confidentially, if you prefer...) Gunter Minnerup
==========
stapplications/feedback #30, from stworld, 458 chars, Dec 12 12:09 90 Comment to 27. Comments.

The standard of major Mac applications is way ahead of anything the ST can muster - the ST is *way* behind. DTP, for example, is just toytown on the ST; great for home users with a DMP, but out of its depth for serious users.
Anyone used XPress 3 or Adobe PhotoShop on the Mac - this is top-end stuff but there's no way we'll see anything close on the ST which has loads of software at a budget price but the budget quality and spec comes with it too.
D.
==========
stapplications/feedback #31, from gminnerup, 1555 chars, Dec 12 22:37 90 Comment to 30. Comments.

You're overstating your case, Dave. Xpress3 maybe the state of the art, but then it bloody well should be given the length of its development and its price. But the fact that no ST DTP prog is the equal of XPress does not mean that its ``toytown, great for home users with a DMP''. Both FSP3 and Calamus are rather better than that - take away colour and there's little they cannot do. OK, we all know from religion that there's no greater zealot than the recent convert, but a realistic discussion isn't helped by such comments. Toytown DTP for home users with dot-matrix printers is some of the PC stuff and Timeworks on the ST - FSP3 and Calamus are somewhere between that and Xpress. Not state of the art, but quite a serious proposition for small-scale professional DTP. There certainly wasn't a single page or even a single issue of ST World which couldn't be done easily with either (except, once again, and admittedly this is of importance, the colour processing). As to Adobe Photoshop etc, have a look at things like Retouche Professional and TmS Cranach. Not yet available in this country, but very impressive indeed. The ST's strength in MIDI software is well known. Wordprocessing isn't bad either, with progs like Protext 5 and Calligrapher. Only spreadsheets and databases let the ST down badly. Some sanity is needed in this discussion. Of course the Mac is generally much more mature, and so it should be. Claiming that the ST is its equal would be gross nonsense, but then so is the claim that ST software is ``toytown''.
Gunter Minnerup
==========
stapplications/feedback #33, from stworld, 719 chars, Dec 13 14:32 90 Comment to 31. Comments. More refs to 31.

You've got to consider the system as a `whole' - saying that you `could probably do that with an ST as well' is largly mising the point. I know what an ST can and can't do - I am most saddened by how the ST does what it

does. *warning*, car analogy coming up: There's nothing a rally car can't do for you at the end of the day, but it's a bastard to drive and has some fairly major hangups.
Mmmm I object to being called a recent convert. I first used a Mac in `84 and have been aware of the machine's development and capabilities ever since then.
I'll admit that there's a much finer line between what a mono Mac and an ST can produce as an end result, but as I've said before, there's more to it that that.
D.
==========
stapplications/feedback #34, from cassidys, 999 chars, Dec 13 16:35 90
Comment to 33. Comments. More refs to 33.

The ST can do most of what the mac is *described* as doing. If you're in the habit of producing machine comparisons by assembling a list of check-boxes in a spreadsheet, it's possible to assemble a comparison which makes the ST look as good as the Mac. Both have fonts, for instance, which are provided on disc and which may be added to a machine's library of type styles. Both support a range of monitors. Both have laser printers. Both will read IBM format discs.
But the ST doesn't do these things by way of ATM, with up to 6 monitors at once, to postscript printers down a supplied plug and play network, or lastly with something as robust as the MacLink translators (to take each example in turn). Their close similarity in technology and specification merely *highlights* how important the attitude of the manufacturer is to the success and support of his product.
Ticking boxes in capability charts to establish the best machine for your needs is inexcusably stupid and short-sighted.
==========
stapplications/feedback #35, from stworld, 102 chars, Dec 13 19:57 90
Comment to 34. Comments. More refs to 34.

I very nice cassidys summary and the facts in a nutshell. You took the words right out of my ci!
D.
==========
stapplications/feedback #36, from amp, 496 chars, Dec 13 21:42 90
Comment to 31.

But the ST is still 1986 technology. Even the TT only has 16 colours at a decent resolution. The Mac has had 256 colours for years and now has 24-bit colour. My mind has just been blown by Studio/8, a sort of derivative by EA of DPaint. There is no comparison. I have never seen the stuff this prog does on any other box. And there's a 24-bit version now too. (But I dont have the hardware). If you look at the real Mac programs, there are no ST comparisons (except in programming tools). IMHO.
==========
stapplications/feedback #37, from jmallinson, 128 chars, Dec 13 23:19 90 Comment to 35.

I assume that Macintosh have always had a clear idea of their intended market, Atari haven't. Isn't it as simple as that? JohnM
==========
stapplications/feedback #38, from gminnerup, 369 chars, Dec 15 15:18 90 Comment to 33. Comments.

But would you say that a rally car belongs to ``toytown''? Your point about the importance of the whole, integrated system is taken - I've never argued that the ST is the Mac's equal in that department. But if you admit there's a pretty fine line in mono DTP between the ST and Mac then the ST can hardly be for home users with dot matrix only, can it?
Gunter Minnerup
==========
stapplications/feedback #40, from gwayne, 2586 chars, Dec 16 13:52 90
Comment to 38. Comments.

Actually Gunter, I have to take issue with you about this `mono DTP' equality that you claim between ST and Mac.
I believe you are on dodgy ground when assessing the requirements of pro users, since your DTP work is occaisional. In the real world of high pressure, fast turnaround deadlines, the ST is not a sufficiently developed platform for such work. Leaving aside the lack of networking and absence of SCSI (with the extra cost incurred when hooking up peripherals) the main issues are speed, efficiency, lack of PostScript and bureau compatibility. And yes, I know FSP supports PostScript, and there's Ultrascript if you can get it - but where do you buy Monotype fonts for the ST, or Gill Sans, or Stone Serif. How do you get screen images of them, how do you download them to your printer, and how, most importantly, do you proof your work before imagesetting.
The real world of pro DTP requires any number of fonts to cater to the many client requirements in a normal working day - if their company style is in Monotype Plantin, they won't accept Garamond just `cos you use Calamus, or can only print PS fonts supplied with Ultrascript. All these fonts will have to be cross-compatible with a bureau - what chance of that?
Another similar issue is that of vector art - in a normal DTP day you need plenty of Freehand/Illustrator type work, even in mono. What programs on the ST will do this kind of job? Outline Art (giggle -how much time you got?). Easy Draw? (gutteral laughter from back row). HyperDraw? (Sounds of retching and laughter combined). And a further point here - no ST programs of this kind offer proper compatability with the PostScript output from FSP etc - no PS font or printing consistancy, no EPSF, poor scan handling, no PS fills and so on.
So while the `Toytown' appellation is a trifle emotive, it is true IMHO that the ST is not a suitable computer on which to do professional DTP. In my experience (20 or so manuals last year), everything on the ST is so slow in comparison (and this is particularly true of Calamus) that I could not afford to do work on the machine. The accumilated time lost through general inefficiency, which permeates every aspect of the machine and its software, costs the professional user dear in that most valuable of assets. In other words, life is too short to use anything else but the absolutely astounding Quark 3.0...
G PS - what's all this bollocks about price of software - as I recall, there was only 50 quid difference between Pagemaker 3.5, Quark 2.12 and Calamus, when the latter was first released.
==========
stapplications/feedback #41, from gminnerup, 2053 chars, Dec 16 16:20 90 Comment to 40.

At last a well-argued case. Yes, Graham, any professional DTP operator choosing the ST in preference to the Mac would have to be crazy, for all the reasons you give. Some of the problems may well be addressed by the TT, at least as far as hardware is concerned: SCSI, colour and greyscale handling, etc. There's also now some software on the horizon in the colour/true greyscale handling fields which may fill the gaps (TmS Cranach, Retouche Professional, Calamus SL) but until all that is tried and tested in practice your points stand. The ST is now roughly where the Mac was a few years ago, except that the Mac was then the DTP pioneer and had all the development energy behind it.
However, the reason why I defend the ST against the ``toytown'' tag is nothing to do with my being blind to its shortcomings when compared to the Apple scene. My concern is with users who cannot afford the Mac setup, but still want to do DTP to something like Mac (mono) standards for small publishing ventures/small businesses etc. My argument is that if they are prepared to put in the effort and to put up with all the wrinkles of an ST setup, they can do everything that you can do with a Mac. More or less, anyway - fonts are still in shorter supply (but I have 120 PostScript compatible fonts for FSP, not a bad start) but that's a simple conversion job which will be done as the demand grows. Vector art is a problem, but FSP will take EPSF and there are various workarounds, plus the likelihood of something coming along soon to rectify the situation. In short: ``Toytown'' DTP is what people do with dot matrix printers on PCs, Amstrads, STs too of course - you know, that fanzine/parish newsletter sort of thing. With care, it is possible to produce high-standard stuff on the ST if you can't afford a Mac setup. If you *can* afford a Mac setup, and if you *need* it for a living in DTP, then by all means get it. I suspect that there is no real disagreement here - it's just that Dave's talk of ``home users with DMP'' got my hackles up!

Gunter Minnerup

Racing Spreadsheets

A. P. Unter explains how boring old spreadsheets may be used for purposes other than keeping records of bank balances, etc. Mind you, with proper use and a bit of luck, the said bank balance might not do so badly...

'How to make a small fortune' - Well, one way is to bet on the horses, preferably when already in control of a large fortune! Is this true?

WARNING: This article and the complementary spreadsheet program are in no way an attempt to encourage people to gamble. This sort of software provides an interesting tool for analysing the science of horse races easily and fairly accurately. However, if anyone is determined to gamble using this spreadsheet, then they should ensure that a pool of money be set aside and considered lost.

The Problem

The bookies are a very clever bunch: with their knowledge and apparent use of 'sonic-binoculars' and tranquillisers, has the punter any chance at all? Overall, the bookies take roughly 20% of turnover; by the methods shown here, it should be possible to ensure that it is someone else's money that the bookie gets to keep. With the power of the ST and a good spreadsheet, help is at hand. Using the results and experience of hardened betting men, a spreadsheet application has been developed, the results of which, when applied to selected races and interpreted properly, can be staggering.

ST User, in the September 1990 issue, had a review of most of the racing programs for the ST. This review was abysmal, giving ridiculous results. All racing analysis programs rely on interpreting the form of horses to predict the likely result, which means that the races analysed must be carefully chosen to suit the program. ST User simply applied the programs to every race on one day at one meeting at Haydock. Obviously, by doing this only one or two races would be suitable and so the nett results would be a heavy loss!

How do we find the best races to analyse?

The bookie has two main weapons in his armoury. Firstly, his books are 'over-round'; this means that if all of the probabilities of each horse winning are summed they come to more than 1, typically 1.1 to 1.3, ensuring he will take between 10% and 30% profit from each race. Normally, large fields are far worse than small to moderate fields. Secondly, a hot favourite is 'clocked', that is, its odds are reduced more than its real chances of winning. This encourages punters to back other horses in the race which, of course, subsequently lose.

On the other hand, the bookie has weaknesses on which the astute gambler can pounce. The bookie has to make a book on every race, even the ones that he would rather leave alone. In contrast, the punter can choose which races to back, thus ignoring the low-profit large field and low-class races, and concentrating on the right type of race.

How do we use the computer to rate a race? The main commercial programs available for this purpose are 'Pro-Punter' and 'The Tipster'. Both of these programs can be accurate in their selections but they both suffer from serious drawbacks. (Incidentally, if you wish to run Pro-Punter then buy the IBM version and run it under a hardware emulator, as the new version is far ahead of the crude old ST version.) The main drawback is the incredibly tedious data entry phase which can take over half an hour. Also, the user has no knowledge of how the program is working and thus finds it very difficult to interpret the results or change the procedure.

In use, neither of these programs is ideal, and they cost a lot of money. To this end, using the wealth of experience gained over years of losing money by backing the wrong horses, a real use was found for those spreadsheet programs that lie around gathering dust in every ST owner's disk box.

All form analysers rate the horses' chances in a race by comparing facts about each one: past performance, jockey, trainer, colour of the owner's socks, etc. This is where the conventional programs fall down: spending 20-30 minutes dib-dobbing masses of data into Pro-Punter II, only to be told NO-BET, is very upsetting. The usual reaction is to put a few bob on anyway, and usually lose it as well.

So, on with the plot. The spreadsheet application explained here is written to run on the excellent KUMA K-Spread 4 package. The final version will be available from the ST Club as a PD piece of code, and obviously a suitable spreadsheet will be necessary to run it. Two sheets are available, one for K-Spread 3 and a slightly more advanced one for K-Spread 4. Note that, owing to the complexity of the spreadsheets, they are over 40K long.

When running, the sheet simply requires the user to enter a few values gleaned from the 'Racing Post' which are then recalculated. The ratings produced are interpreted according to a few simple rules to see if the results are sound. The data entry phase only takes a few minutes for a normal-size race, and the amount of data entered may be selected by the user depending on the accuracy required.

The races selected from the day's meetings are governed by a few simple rules, and the race must meet all of these rules before it is included. This advice is of course optional, and indeed some experimentation is welcomed.

Rules For Selection

- ✓ Distance of one mile or greater (flat racing only).
- ✓ More than 4 runners yet fewer than 15 runners.
- ✓ The first five horses in the betting must have run at least twice this season.
- ✓ The first five in the betting must have a Postmark figure.

Some days, of course, there may be no selected races at all. In this event do not just put a few races in to see what happens; invariably the result will be a losing run. Assuming that some results have been obtained, the values produced have to be analysed to see if a valid bet can be obtained. The spreadsheet is incredibly accurate in predicting winners in its top three rated. The only problem is how to select the best one from the top three. Dry runs can show many different ways of

backing, ranging from backing all of the top three to ultra-conservative methods of selection. The method developed is detailed below, and, whilst it does miss some, it seems to be a fairly accurate way of selecting winners.

Bet Criteria

Back the top-rated horse if, and only if, the horse's consistency rating is also the highest of all of the horses. If any horse is joint-rated, then there is no bet.

One very interesting betting method is to bet on forecasts and tricasts. This is where the first and second and optionally the third horses are specified. The rewards are spectacular and quite often the rater gets these right.

The Spreadsheet Itself

The spreadsheet takes in the pre-prepared data about each horse and calculates both a 'rating' and a 'consistency' figure for each horse. The rating is a measure of the horse's performance, and the consistency is a measure of how the horse compares to the others in the race. It levels out any very high figures so that they do not cause strange results. The higher the value, the better that horse's chances are.

In order to calculate these values, the figures entered are first normalised to 100, and then each horse's value is compared against the others. This results in over 600 'IF' formulae. Owing to the way that most spreadsheets work, the sheet has to be re-calculated a few times to converge the answers. Once the figures are stable, a simple descending sort on range B2 to L14 will arrange the horses in order. If the data entered are to be played with to see what effect they have, then do not sort the data or else errors will result.

The Data Required

When entering the data, it is useful to jot down the values on a sheet of paper. Unlike the commercial programs, this allows all races to be saved and the weighting factors experimented with at will.

Column B: 'HORSE'; the horse's name.

Column C: 'FORM'; a measure of the horse's recent form and proven ability, obtained by a quick piece of mental arithmetic.

Last two runs: WON = 5 pnts, 2nd = 3 pnts, 3rd = 2pnts; course winner = 1 pnt, distance winner = 2 pnts.

So the maximum points is 5+5+2+1 = 13 for an 11 CD horse.

Column D: 'POSTMARK'; the Racing Post handicap rating, which is their assessment of the horse's chances.

Column E: 'SPEED'; for a quick calculation, this can be simply the Racing Post speed rating. Or use a more comprehensive rating based on the formula shown below:

Previous WIN/PLACE

This season, same going, WIN +20, place +12
This season, similar going WIN +15 place +10
Last season, same going WIN +6 place +4
Last season, similar going WIN +4 place +2

Speed Rating

Top rated +10, second rated +6, third +2 pnts

Fitness

Last run 1-7 days, WON +20 pnts, place +16
Last run 8-14 days, WON +16 pnts, place +8
Last run 15-21 days, WON +8 pnts, place +4

Place in Betting

1	+20 pnts
2	+16
3	+12
4	+8

Jockey/Trainers in form (Overall tables)

1	+10 for trainer, same for jockey
2	+8
3	+6
4	+4

Horse fallen	-6 pnts
Pulled up	-4 pnts
Unseated rider	-2 pnts

This gives a maximum value of 90 points for any horse.

COLUMN F: 'OTHER'; This column is reserved for any further additions; for example, another newspaper's ratings could be entered here. The values are included in the consistency figure.

Since racing is based more on long-term statistics than short winning runs, I am not showing any tables indicating incredible gains to be made; rather, this is presented as a useful tool for the amateur gambler (investor?) which can be tailored to his/her precise needs.

As the workings of the spreadsheet are readily accessible, the data entered may be easily changed to experiment with differing systems.

Use a Bank

As a pointer to the best way to invest, establish a 'bank' of monies and divide this bank by 20 to give the unit bet stake. Only back horses to win. Whenever the bank swells in size, increase the unit stake so that it remains at one twentieth of the bank. This system gives a very rapid growth in the bank even with moderate wins, and offers considerable security against all but the longest losing run. As with all systems, try it out on paper first to see if it's viable.

Good luck!

Pro-Punter II

DGA software

Telephone: 061 330 0184

Pros:

Betting advice (back or not and at what odds); comprehensive data input for accuracy; compares all the horses against each other.

Cons:

Slow under PC-Ditto; slow analysis time; tedious data entry.

The Tipster

TAM marketing

Telephone: 0392 215485

Pros:

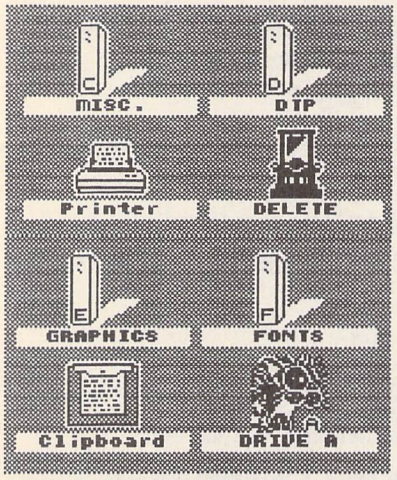
Easy to use; very fast analysis time.

Cons:

Analysis performed horse by horse; tedious data entry; no bet advice: the horses are not even sorted into rated order; original version would not work in mono.

The spreadsheet files that go with this article will be on disk DMG.22, the Disk Mag that accompanies the next issue of ST Applications.

Building a Better Desktop



With the recent release of version 3, the popular alternative desktop NeoDesk looks set to give Atari users around the world a friendlier environment and more features than ever - especially in Canada, where NeoDesk is now being bundled with every ST sold. Via the miracle of electronic mail, Graham Thomas 'talked' to NeoDesk author Dan Wilga on the other side of the Atlantic.

Graham: Dan, first tell us something about yourself. For instance, what did you do before NeoDesk entered your life?

Dan: My fascination with computers began at the impressionable age of ten, when I began to pester the employees of the local Radio Shack (you know them as Tandy) by using their demo machine. This was the original Model I, back in the days when 16k was more memory than anyone knew what to do with. Perhaps if the manager of the store had known what my visits would eventually lead to, he would have thrown me out there and then for fear of contributing to the delinquency of a minor!

After using BASIC on a Model II, an Apple II, and a few other machines during my formative years, I was finally able to save up enough money for one of Uncle Clive's beasties, marketed in the U.S. as the Timex/Sinclair 1000. Frustrated with the lack of speed in BASIC on the machine, I discovered that you could get a good deal of speed out of it by using Z80 assembly language.

Several hardware modifications later, the T/S-1000 died on me (so much for my career as an electronics engineer). I eventually got enough cash together to buy an Atari 800XL. Needless to say, I got bored with BASIC and decided to learn 6502 assembly language; among other things, I made small improvements to the operating system.

Soon after, I began attending a local university. I quickly discovered that the old 800XL just wouldn't cut it when it came to term papers and reports (40 columns! Ack!) and decided on the next logical step: a 1040 ST. Of course, having access to a newly opened local Atari dealer didn't hurt things, either. Ironically, this machine was funded by my employment at the local Radio Shack store. It's a good thing they didn't remember me!

During this time, I also worked for the University of Massachusetts managing a library of graphics routines and writing a new statistical graphing package for one of their mainframes.

Graham: When and why did you start to write NeoDesk?

Dan: After buying the machine and, eventually, a C compiler and hard drive, I started to use the compiler to write a few things. Having become friends with the two guys - Rick Flashman and Mike Cohen - who sold me my ST, I would often visit the store to ask their opinions on whatever I was programming.

It was on one such visit that I expressed my disgust with the text-based shell that comes with the compiler, which happened to be the only way to get it to work well. "Why couldn't Atari have just put the things this compiler needs to work into the desktop in the first place?"

Of course, Rick's immediate response was that I should rewrite the desktop. I proceeded to tell him how much I doubted it could be done. A few days later, I told him it could be.

That's right. You heard it here. NeoDesk was created just so I could have environmental variables to run my compiler with. Gribnif Software was born. (And, no, Graham, I'm not going to tell you what Gribnif means.)

Graham: What were the hardest parts of the program to write? What compilers and tools did/do you use?

Dan: Development of the first version of NeoDesk began in January of 1988. Even though the ST had been out for a good while, there was still precious little information on how to write a shell to run other programs, and even less information on how one would go about doing it graphically.

At the time, the only thing I had to go on was what was in the manual that came with my compiler (which, if you hadn't guessed by now, was Mark Williams' C). That, and the willingness to try absolutely *anything* to get things to work the way I wanted to, were what kept me going. You can learn a lot about the limitations and bugs of any operating system by just trying to write an application that uses most of its features.

NeoDesk 1.0 was released in May of 1988 and, by the responses we got on our registration cards, we discovered just how badly people wanted a better desktop (and what features were missing in version 1.0). This led to NeoDesk 2.0 in November of 1988. A few months later Rick and I, along with Tricia Metcalf, made Gribnif Software a separate company so that we could pursue NeoDesk full-time.

By the way, I also found, and still do find, the text editor Tempus to be invaluable for programming. For NeoDesk 3 I also switched development systems; this version is compiled using Turbo C from Borland, Germany.

Graham: What has user feedback been like? Which have been the most-requested new features over the years?

Dan: Since NeoDesk is one program that absolutely everyone can benefit from, we get lots of suggestions. Some things are trivial to add; for the other new features I try to apply three basic tests, listed here in their order of importance:

1. Can the new feature be written so as to fit in consistently with the overall interface of NeoDesk? Will it be too complex for the average person to understand? Will it make other features too difficult to understand?

2. How will the feature affect memory consumption, file size, and disk access time?

3. Can it be written "correctly", so as not to interfere with other programs? Is the amount of time and code needed to write the feature "correctly" outweighed by the anticipated usefulness of it?

The most commonly requested feature for version 1.0 was Show as Text, which it did not have. Later, people really wanted the ability to change the desktop background to a different pattern or picture. All along we had gotten many requests for custom icons that could be assigned to any file or group of files, so that was eventually added for version 2.03.

Many of the new features in NeoDesk 3 are the result of looking for a better way to do something that could already be done in NeoDesk or special utility programs designed specifically for that purpose. For instance, the File Clipboard™ and split windows were added to improve file manipulation, the icon editor was completely rewritten (because it needed it!), and full macro recording was added.

This is not to say that we don't appreciate all of the comments that simply say, "I love it" or "I can't live without it." We most certainly do!

***Graham:** What do you think of the competition - Gemini, DC Desktop, the new TT Desktop, etc.?*

Dan: Because I am obviously quite biased where this question is concerned, I'd like to simply say that in my opinion NeoDesk is the only one of the programs you list to excel in all the areas of compatibility, memory consumption, ease of use, ease of installation, error trapping, and quality of documentation and support. Even with all this going for it, it still contains more features than any of the programs you mention.

***Graham:** Many developers have found interacting with Atari Corp. more than a little difficult. What have been your experiences? Has the company changed at all recently?*

Dan: Atari is like many big companies: little fish are much easier to get to know than big ones. While developer relations have definitely improved over the past year or so, much of which is due to the efforts of the "little fish", there are still some pretty big barriers that need to come down. Information still needs to flow more freely so that developers can update their products well in advance of new releases.

***Graham:** How have you found working with the wider Atari community? Who has given you the best or most consistent support? Have you had any disappointments?*

Dan: The remaining Atari developers are doing an admirable job of banding together despite the condition of the ST market. One of the biggest forums for exchange of information and ideas right now is the Independent Association of Atari Developers (IAAD). Nearly every North American developer, and a few European ones, use the IAAD category on GEnie as a means of discussing issues and planning for the future.

Although, as a group, the IAAD has not been able to directly affect the entire Atari community as yet, it has definitely sent a clear message to Atari itself that developer relations need to keep improving.

At the risk of boring all of your readers, I'd like to say that perhaps the most helpful people in general have been Bob Brodie and Bill Rehbock at Atari, for their great efforts to improve things, Nathan Potechin at ISD, for his experience in the market and his drive to get the IAAD organized, and Darlah Pine and her sysops on GEnie for giving us all a place to communicate.

***Graham:** Do you think the 'serious' Atari market is still growing, and still worth writing for? What do you think of the prospects for the new machines, the TT, the Mega STE, etc.?*

Dan: Even though Atari Corp. has been making improvements in some areas, most developers are still somewhat pessimistic about the future of the Atari market. The consensus seems to be that the new machines are basically a case of "too little, too late". Had they shipped two years ago, they may have had some chance. As it is right now, the hardware is not as good as it should be for a new product, and there is still the fact that the operating system has been without a major upgrade since 1985. TOS needs many new features in order to compete at all.

***Graham:** Tell us about the other Gribnif people. Who does what? Where are you located? What's your 'corporate style'? Does Gribnif produce other things apart from NeoDesk?*

Dan: The other two owners are, as mentioned earlier, Rick Flashman and Tricia Metcalf. I try to handle all of the programming and most of the online customer support. Rick does the marketing, advertising, documentation, and helps with technical support. Tricia does technical support, edits the documentation, maintains the database, and oversees all of the day-to-day activities of the company and its other employees.

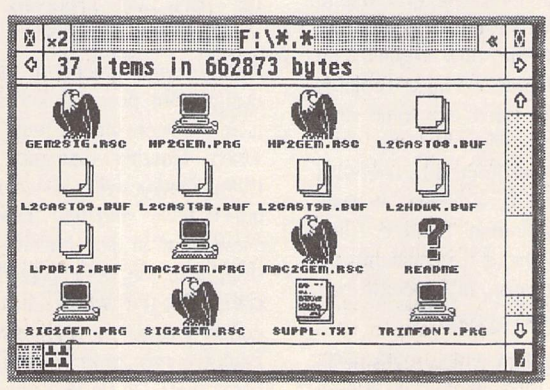
In addition to NeoDesk we also publish the NeoDesk CLI, a companion command-line interpreter in a GEM window, and the NeoDesk Developers' Kit, which instructs software programmers how to write code that can take advantage of many of NeoDesk's features in their own desk accessories and programs.

We are located in a modest (read: much too small) office in Northampton, Massachusetts. Our "corporate style", as you put it, generally means working until we drop, arguing profusely about something as trivial as what color to make an icon, and consuming lots of highly caffeinated soft drinks.

***Graham:** At the moment you probably just want to relax for a while, but how do you see NeoDesk developing in the future? Is NeoDesk 4 on the way, or will you concentrate on programs that enhance or interact with it?*

Dan: While there are one or two improvements left to be made to NeoDesk, I am currently concentrating more on an update to the NeoDesk CLI which will add all of the things people have been asking for most (hmmm... sounds familiar). Aside from that, there are a couple of other products being seriously considered, though we wouldn't want to be accused of making vaporware by telling you about them in advance, now would we?

***Graham:** Thanks, Dan. We'll follow future developments with interest.*



Giving it the WERCS

John Durst offers advice on getting the most out of "WERCS", HiSoft's Resource Construction Program.

The GEM interface built into the Atari ST is not only designed to replace much of the typed input to the computer with a more intuitive graphic screen layout using a mouse: it is also designed to make programming in this graphic mode simpler. Fundamental to the approach is the use of "Resource Files", which can hold much of the display information used by a program - the Menus, Dialogue Boxes, Alerts and so on - in self-contained files, which can easily be altered, or translated into a foreign language, without interfering with the main program.

These Resource Files can be produced by hand; they are not particularly difficult, just very tedious. To take the curse off them, one needs a "Resource Construction Set" and WERCS is HiSoft's version. Like all good GEM programs, it draws heavily on the GEM interface which it is helping you to use, so that the presentation is visual and easy to use, with lots of nice icons, menus and dialogue boxes to help you along.

Although there is a well thought-out manual, there are some points about using WERCS which can seem tricky - or at least I thought they were - and I hope I can help you to avoid some of my mistakes.

Let's assume that you have acquired and played with WERCS, so that you have an idea of what it is like and how it goes. You know about Trees, Objects, Flags, Tedinfos and so on: you have tried out some programs using resource files. By the way, although WERCS is not limited to use with HiSoft Compilers and Assemblers, it does tend to rely on common header files, Macros, etc., which make a programmer's life easier. For this reason, my specific references are to the HiSoft products.

One fundamental problem which turns up in designing Resource Files is that of screen resolution. The pixel counts in all three Atari screen resolutions are different. High Res. has twice as many lines as Medium Res. and Low res. Low Res. has only half the number of columns as the other two. This means that objects - particularly images and icons - will not look the same in all resolutions. What looks nicely proportioned in Medium resolution comes out broad and squat in Low resolution, or half the depth in High resolution. There is a bit of confusion in HiSoft's directives here: there is a routine in the AES resource library, known as "RSRC_OBFIX", designed to fix up objects to the right proportions in any resolution, provided the co-ordinates are in character sizes. HiSoft's HBasic manual says, "character co-ordinates are used in resource files to store the co-ordinates of an object" and "normally the conversion is performed automatically by the FNrsrc_load call"; however, WERCS operates in pixels.

In practise, whatever the rights and wrongs, it seems to work out reasonably, except for Images and Icons. It's worth checking your programs at all resolutions if you want them to be universal. If you have a complicated program, it is probably better to have a cut-out routine at the start of the program, which limits it to a particular resolution. Then you can prepare different versions of the .RSC file to suit the varying conditions. I shall be dealing with the particular problems of Images and Icons in a future article.

Another small problem can show up if you design your program in colour and then run it in monochrome. There is a temptation, when drawing dialogue boxes, to make them showy, with all sorts of pretty coloured boxes and text. Beware! When you view them in monochrome they can simply disappear, or be replaced by solid black slabs. On the whole, it is as well to be conservative in colours and patterned backgrounds (which look better in high resolution). Or be like me: have fun putting them all in - and then take them out again at the next session. It's quite easy with WERCS.

Traditionally, dialogue boxes are displayed in the centre of screen; this is achieved automatically by GEM through the FORM_CENTER routine. However, if you drop this out, you can set your own co_ordinates and put the box anywhere you like. After the initial FORM_DIAL, FMD_START call you should do something like this: form&+ob_x,your_x:POKEW form&+ob_y,your_y", where "form&" is the address of the dialogue box root object and "ob_x","ob_y" are the offsets for the co-ordinates in the tree structure.

Although GEM tidies up and restores the screen automatically after a Menu has been used, it does NOT tidy up after a dialogue box. You have to do this for yourself. Again, traditionally this is done by arranging for a WINDOW_REDRAW message to be looked for in the program "EVNT_" loop and then redrawing the appropriate bits of screen. It is sometimes easier to save the piece of screen under a dialogue box, just before you display it, and put it back again when you have finished. HBasic's "GET" and "PUT" statements can do this very neatly.

There will be an annotated program to illustrate these points and some others on the next Disk Mag (DMG.22).

Some other points need watching when using WERCS. Watch out for the "character snap" and "half character snap" options on the menu. If they are active you may find that your texts and buttons can get snapped away to almost nothing! A good way of recovering from this (after turning the snap off) is to call the EXTRAS, in the WERCS "FLAGS" menu. Then you can set the width and height the way they should be. In fact, the EXTRAS dialogue is a useful tool box. You can use it to fine-tune the positions and sizes of objects much more accurately than you can with the Mouse.

Some parameter-passing bothered me, too. If there are no editable fields in a dialogue box, make sure to pass "0" as the starting object when you call "FORM_DO": the WERCS manual mentions, under "common mistakes", passing "-1", which can cause crashes. But if you pass the number of another object in the tree, you can get a phantom cursor on the screen! This had me worried for a long time. ONLY if you have an editable field (F_TEXT, or F_BOXTEXT) pass the number of the object you want to show the cursor, when the box appears. But if you have several editable fields in a Dialogue Box, the number doesn't have to be that of the first field in the tree; you can select whichever one you want - or even get the program to select it.

Another point which is not immediately apparent is that a Radio Button doesn't actually have to be a Button. You can use an Image, or even an empty Box (which you can colour like a traffic light). All you need to do is to group the objects within an I_BOX and set SELECTABLE|RADIO_BUTTON in each object's OBJECT FLAGS.

David Nutkin's demo program "WTEST", on the WERCS disk, is one of the most valuable features of the package. It contains a lot of routines which are so useful they simply have to be lifted out for use in one's own programs. I found it worth spending quite some time puzzling through the whole program. The heavily structured lay-out can be difficult to follow as it skips about, but it is a model of its kind and makes adaptations easy and safe.

One final point: you can easily use WERCS to edit Resource Files from many commercial programs. WERCS puts up a menacing Alert Box with a TOS error, when it finds no .HRD file. But after this snarl, it goes on quite meekly. If, like me, you think US programs have trouble spelling "colour" and "centre", you can fix it up. You can also change positions, colours and patterns to suit your taste. But be careful not to change the order or number of any objects, or the program will almost certainly crash.

WERCS:.....£29.95

Supplier:.....HiSoft, The Old School, Greenfield, Bedford MK45 5DE

Tel:.....0525 718181

WERCS Dialogue Box Demo written in HiSoft Basic

```
'make sure header & library files are in same
'directory as program

DEFINT a-z
LIBRARY ''GEMAES''

'40k to Leave, variable checks on
REM $OPTION 140,v+
REM $INCLUDE GEMAES.BH
REM $INCLUDE DEMO.BH

CONST type_tree=0,type_object=1,ob_sizeof=24
CONST FMD_START=0, FMD_FINISH=3

'global variables
DIM SHARED junk
DIM SHARED form&,te_ptext&

DEF FNob-
ject&(tree&,object)=tree&+object*ob_sizeof

'the main program starts here

junk=PEEKW(SYSTAB)
IF junk<>2 THEN
junk=FNform_alert(1,''[3][This version
for|MEDIUM RESOLUTION only][SORRY!]'')
  SYSTEM
END IF

DIM SHARED box(8000)'big enough for image
          'buffer

MOUSE 0

' load resource file
IF FNrsrc_load(''DEMO.RSC'')=0 THEN
  junk=FNform_alert(1,''[3][Resource file|
not found][Quit]'')
  SYSTEM
END IF

' display boxes in order from 0 to 4
  FOR j=0 TO 4
    tree_num=j
  ed=2:IF tree_num=3 THEN ed=0
        ' ''2'' is current editable string

junk=FNrsrc_gaddr(type_tree,tree_num,form&)
   'address of tree

' set up editable objects:
'tree No:3 does not have one

  IF tree_num<>3 THEN
    init_rsc form&,ed
  END IF

' if you want choose where to put the box,
'you must do this:
  POKEW form&+ob_x,j*30:POKEW form&+ob_y,j*20

' subroutine handles dialogue box
   junk=FNhandle_dialog(form&,ed)

' print out contents of editable string
'(address at ''te_ptext&'')
  WHILE PEEKB(te_ptext&)<>0
    PRINT CHR$(PEEKB(te_ptext&));
    INCR te_ptext&
  WEND:PRINT
NEXT

good_bye
END

'handle dialogue box
DEF FNhandle_dialog(VAL dial&,edit%)
STATIC x,y,w,h,btn
SHARED j

' drop following line, if you want to
'use your own coordinates
'form_center dial&,x,y,w,h

'allocate memory space
form_dial FMD_START,0,0,0,0,x,y,w,h

' if you want to save the screen under the box,
' you must do something like this:

x=PEEKW(dial&+ob_x):y=PEEKW(dial&+ob_y):w=PE
EKW(dial&+ob_width):h=PEEKW(dial&+ob_height)
PRINT ''Box No:'';j+1;x;y;w;h'just to show
GET (x,y)-(x+w,y+h),box

' draw the box (level 10 is overkill)
' x.y.w,h is clipping rectangle:
'try setting your own
junk=FNobjc_draw(dial&,0,10,x,y,w,h)

' ''edit%'' is the number of the first editable
'object in the tree ' you must make''edit%''=0,
'if there is no editable string ' or the
'phantom cursor strikes!
btn=FNform_do(dial&,edit%)

' finished with dialogue

form_dial FMD_FINISH,0,0,0,0,x,y,w,h

' restore the original screen,
'if you have saved it
PUT (x,y),box,PSET

FNhandle_dialog=btn 'returns the numbr of
'exit object
END DEF

SUB init_RSC(form&,edit_num)
SHARED j
STATIC t&,ted&,te_ptmplt&,n
    ' zero the editable string
t&=FNobject&(form&,edit_num)
    'address of BOXTEXT
ted&=PEEKL(t&+ob_spec)
    'address of TEDINFO structure
te_ptext&=PEEKL(ted&)
    'address of editable string
te_ptmplt&=PEEKL(ted&+4)
    'address of template
n=0:WHILE (te_ptext&+n)<te_ptmplt&
POKEB te_ptext&+n,0
'zero to set cursor at start of string
INCR n     'good idea to clear whole text string
WEND
END SUB

'free resources &c & quit
SUB good_bye
junk=FNrsrc_free
END
END SUB
```

Jeremiah's Journal

There comes a time when even the most enduring of champions must lose its throne. For some time now, Dungeon Master has held sway as the ST's premier adventure title. Jeremiah takes a look at the latest in a long line of pretenders to its crown.

Looking back on it now, it's hard to over-estimate how important a turning point the appearance of Dungeon Master represented in the world of computer adventure games:

All of a sudden, from almost out of nowhere, there arrived a game which seemed to have it all. There was an intelligent plot, a vast play area, truly atmospheric graphics, steady character development through many stages, intricate puzzles and problems, simple but effective combat and magic systems, and a whole host of objects and equipment to be collected and used.

This, on its own, would have been more than sufficient. However, all these potent features were wrapped up in a graphical, fully icon-driven, intuitive user interface which was brilliantly straightforward to use. The overall result being that Dungeon Master was not only one of the very best adventures ever to appear, but it also single-handedly created a whole new "style" of game!

Send in the Clones

Others have attempted to emulate its success by emulating its "style". Almost from the very first, the market has been awash in Dungeon Master "clones". Some have done it with a fair degree of success: "Bloodwych", for example. Some have done it with hardly any success at all: "Galdregon's Domain" springs to mind. Dungeon Master has even tried to copy itself with "Chaos Strikes Back", but that was not altogether successful either.

Lately, there has been a move towards taking the "style" into Outer Space in order to breathe some originality into it.

"Xenomorph" was the first, a nicely enough presented game (accompanied by a novella which was good enough to turn into a novel) but which turned out to lack any real substance at all. In the end, it turned out to be no more than an exercise in "mapping and zapping"! Despite the graphical excellence, this was never going to be enough to satisfy game-players.

"BSS Jane Seymour" (despite the infinite naffness of the name) also promised much. However, each level turned out to have exactly the same layout as its predecessor, and the task to be completed each time was the same also. Although slightly differing methods may have been necessary to achieve success each time, it was not enough to justify the effort. In addition, the designers altered the user interface in ways that made it less intuitive and more cumbersome to operate. Now comes the latest 'pretender to the crown' - "Captive".

A product of that veteran games writer and self-confessed Dungeon Master freak, Tony Crowther, the game immediately disproves the popular myth that successful games production is now beyond the capabilities of just one man and requires a "team" instead. Crowther not only completed the original design for the adventure himself, he also did all the graphics and all the programming too!

Captive was originally offered to Mirrorsoft (or so I'm told), but they turned it down on the grounds that it resembled Dungeon Master too closely and they felt it might endanger their relationship with FTL if they published it. It therefore made its way to Mindscape, who readily snapped it up. It has already, in the few months since its release, become Mindscape's best selling title to date!

Let's start at the beginning

Captive starts with a story of betrayal, and a trial that goes badly wrong. Our hero finds himself sentenced to a term of 250 years in suspended animation for a crime he swears he did not commit.

Unfortunately, when things start badly, they tend to get worse.

So it is that, after some indeterminate time, our hero finds himself abruptly woken from his frozen sleep for reasons he cannot yet fathom. Through the window in the cell where he is held captive, he sees signs of wreckage and carnage. Something ... someone ... somewhat? ... has devastated the orbiting space station that serves as his prison.

In a corner of his cell (which seems to have doubled as a store-room during his sleep) he finds a small but powerful portable computer. Using its facilities, he manages to make contact with a group of four renegade droids and succeeds in enlisting their aid in bringing about his rescue. Only problem is, he doesn't have a clue where he is ... and neither do they!

This is where you come in. It is your task to take the part of our hero and, using the computer, guide the droids across the galaxies, planet by planet, to your location so that they may return your freedom to you. The task is huge and complex, and the band of droids will leave a trail of devastation and havoc behind them - if something else doesn't devastate them first!

What you see

Unlike some of the other clones, Captive sticks pretty much to the standard Dungeon Master interface. The left hand side of the screen is taken up by the graphics window giving you a first person perspective of the scene in front of you. The right hand side consists of a large bundle of icons through which you exercise control over the game.

There is the expected cluster of movement arrows allowing you to go forward, backwards, sideways and turn around. There are icons representing the hands of each droid, into which weapons and other items may be placed. There are controls for saving and restoring the game, for pausing the action, and for putting the droids to sleep.

So far so good. Where Captive scores is that it doesn't attempt to adapt or change the Dungeon Master interface. Instead, it keeps everything that the original had, and then adds to it. So that, for instance, the movement icons allow you to move, but also, clicking on the forward icon with the right mouse button, allows you to PUSH things too. In Dungeon Master, the champions could only fight with weapons placed in their right (as you looked at it) hand. In Captive, they can fight with both hands and have a different weapon in each!

There are some additional icons too. There are up and down controls to allow you to climb and descend ladders. There are icons to control the droids spaceship so that they can travel from

planet to planet. There are five video screens positioned across the top of the display which allow the droids to utilise remote devices. There is a "Chinese Icon" which gives you access to a "Control Panel" type screen where you can change the presentation settings (e.g. you can change the screen colours if you want).

I could go on like this, but I think you get the message by now. Captive gives you all the control that Dungeon Master did and much more besides.

Developing a droid

Character (or should that be "droid"?) development plays a large part in the game and there are several ways in which your party can progress and improve.

Each droid starts off at a fairly low level. They have no skills, no weapons, pretty poor armour and no money - you really have got to be desperate to trust your life to these guys! As they explore the first planet, however, they will pick up experience points from battling aliens (using fists alone at first). These experience points can be used to upgrade existing skill levels so that they progress sufficiently to be able to access new and different skills. These, in turn, when developed enough, will bring other new skills into reach. Droids that do not possess the relevant skills will not be able to make use of the weapons and equipment that become available to you as the game opens out. Without this enhanced weaponry, you just ain't gonna last very long!

Battling aliens also brings rewards in the shape of hard cash. Each alien leaves a bag of loot behind as he perishes. Collect the money and you have the means to trade with the eccentric race of shopkeepers which inhabit all the planets you visit: strange, enigmatic men who crouch behind their store counters, apparently impervious and oblivious to the destruction that surrounds them. From them you can purchase, should you have the means, better armour, better weapons, more ammunition and a whole host of extra goodies which will help to keep the droids' circuits intact through the ordeals to come.

Across the Universe

Your droids have ample time to improve themselves too. Their odyssey will take them through a huge number of different planets (an estimated 65,500 levels) and a countless horde of hostile aliens. In order to discover the next planet to visit, they need to explore their present location thoroughly until they find a computer terminal and the password to access it. From this they will acquire a Planet Probe device. They then need to destroy the generators which power the planet and escape safely before they can use the Probe to determine their next port of call. This overall objective remains the same for each planet.

However, the methods of achieving that objective differ from planet to planet. There is a slow building of elements and complexities. Each planet expands on the elements of the previous one by introducing just one or two new wrinkles of its own. These new wrinkles require you to re-think your strategy, acquire extra equipment or use a combination of both in order to succeed.

In addition, the droids need to take the time on each planet to gain the experience, skills and equipment needed to give them a chance of surviving the next one. Therefore, even if the computer and its password is found fairly quickly, it may be better to explore further rather than dash off immediately to the next location.

The nearest thing yet

The game starts off very well. It is extremely close to Dungeon Master in spirit and presentation, but it is also sufficiently different to warrant your attention on its own merits. The variations which creep in as you progress prevent it from becoming just another "map and zap" exercise. I find that each new planet is sufficiently different to provide the incentive required to make me want to see what extra things the next one has in store. So it is that the planets pass by, but the interest is maintained. This in itself says much for the game.

The manual and other documentation which accompanies the game is hugely lacking in both detail and clarity. At first, this displeased me greatly. However, it does create a situation where you have to experiment widely and ponder deeply in order to work out what items do what and how they are operated. In a way, each object in the game is a minor puzzle in itself, and solving the puzzle always brings a warm glow!

There is no doubt that this is an exceedingly good product. It's well designed, well implemented, reeking with atmosphere and as close to Dungeon Master as anyone has yet got. However, I do feel that 65,500 levels is a bit too much (even if each planet had 65 levels, which they don't, that still means over 1000 planets to visit! I have this vision of passing my saved game disk on to my grandson, saying, "There you go, boy. Only another 40,000 levels to go!" and then, somewhere much further down the line, perhaps his grandson will eventually finish it off. Then again, can anybody's interest really last that long?

Game designers please note : long games are great; big games are great; multi-part games are great; games that produce a string of sequels are O.K.(-ish); games that simply don't end are just a pain in the butt!

In the meantime, Mindscape, flushed with the success of Captive, have commissioned Tony Crowther to produce a set of extra mission disks for the game. (Since few people will finish the existing levels, one wonders at the logic which suggests there is a market for extra missions!) As well as these, there is a "CAPTIVE 2" in the pipeline. The scenario is not yet known, but let's hope that it at least has an ending to it.

In the meantime, if you haven't yet taken a look at Captive, but you were quite keen on Dungeon Master, then give it a try. I think you'll find that it contains much to entertain and delight you.

Product:.....CAPTIVE - The Quest For Freedom
Author:..... Antony Crowther
Publisher:..... Mindscape International
Price:..... £24.99

Hints & Tips

What are they good for?

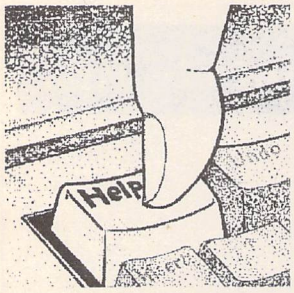
for 'Captive'

OPTICS :

1. Ag-Scan.....alien pain viewer
2. Route Finder.....guides you around
3. Mapper.....maps your route
4. Radar.....highlights aliens from afar
5. Magna-Scan.....compass
6. Body-Scan.....quick reference to droids
7. Vision Corrector.....reveals secret passages
8. Visor.....shields vision from blindness

DEVSCAPES :

1. Anti-Grav.....sticks you on the roof
2. Shield.....shields all droids
3. Fire-Shield.....shields from fire
4. Greaser.....oils limbs for fast action
5. Power-Sapper.....drains aliens of energy
6. Fixer.....repairs droids
7. Recharger.....recharges a droid
8. Deflector.....deflects all shots and sends them back



FORUM

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

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

Key:

The following codes are used for each Forum entry:

J Pringle - Forum 29: Author who first raised the subject, and in which issue. In this case 29 refers to the Forum pages in Issue 29 of The ST Club Newsletter.

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

FSP3 or Timeworks DTP

Mike Kneen - STA2

I For Mike Kneen the contest' between Timeworks and Fleet Street 3 has been determined principally by the superiority of bit-mapped fonts at low point sizes, while he grants the superiority of vector-generated fonts for larger type. It appears he has yet to discover the feature of FSP3 which determines the contest for me: its ability to mix bit-mapped and vector fonts on the same page. The manual does not indicate this feature, which allows those who have accumulated a library of GDOS fonts to continue to use them in the new environment; one of my first tailoring actions was to install Jeremy Hughes' superb Century fonts. FSP3 therefore affords the best of all worlds; it accommodates those whose use of the program extends only as far as 300dpi resolution on an inkjet or laser (indeed only so far as a 9-pin printer), but also those who need the high-resolution output of a postscript bureau (which will make small point-sizes from vector fonts look very nice indeed). Incidentally, the 300dpi output of vector fonts at low point sizes is considerably superior to that of Calamus.

It's good, though, to see someone attending to the relative quality of output from dtp programs. I am amazed that journal reviews will describe in detail the most abstruse features of a program, but fail to give any indication of how the result looks beyond (at best) comparative photographs of output on different devices, which cannot be the basis for decision given the unreliability of the reproduction. In this connection, how fortunate it is that the sponsors of Proxima demonstrate in every advertisement the horrible ugliness of the supplied fonts and the incompetence of the justification routines. That was one possibility counted out!

I do hope that Mirrorsoft's decision to retain the rights to FSP3 will encourage the continuous development of their very fine program - and result in some intelligent advertising which identifies its advantages over all other DTP programs for the ST. Incidentally, the failure to support tagging is to some extent compensated by the ability to define which typographical features of an original word-processed file should be carried over into FSP3. The range of options provided is extensive and detailed, but it would certainly be nice to have the option of importing tagged ASCII files. Additionally, a simple way of rotating text, and grids rather than just vertical guide-lines (together with the PostScript bug fixes and UltraScript availability) should be addressed quickly if FSP3 is to fulfil its remarkable potential.

John Wilkinson

● I, too, have installed GEM fonts into FSP3: Castleton Roman and a Bullets font. GEM fonts undergo scaling algorithms so that they may be used 'at any point size, like the vector fonts. The results are quite good so long as the installed GEM font was well designed: the scaling routines certainly show up any deficiencies that may be present in the GEM font. The manual does in fact make reference to the installation of GEM fonts: on pages 382-383 and 396-399. (DFS)

I I am pleased to say (from a user's point of view) that you have made a mistake about Mirrorsoft selling FSP3. In fact they have retained the ST version and sold the PC version. It is a little sad that only one man is at present dealing with this excellent product, but he assures me that the additional fonts, long promised, are almost ready. The width tables are all that is left to do, and they should be available in January.

PCG are awaiting some information from Mirrorsoft so that they too may enter the fray.

I hope that we may have some fonts soon. I would ask you if you know of anyone who can set FSP3 to Linotronic output at more than 300dpi?

Dr. Dyfrig Davies

● Any PostScript bureau should be able to set work from FSP3, just print the pages to disk as a PostScript file and deliver it to the bureau on an MS DOS format 720K disk. Use one of the many PD formatting utilities to get a PC format disk if your ST has a TOS version below 1.4. In the first instance it is probably wise not to tell the bureau the source of the data - some PC and Mac orientated bureaux are convinced that printing output from 'games machines' is more fuss than it is worth, and they will do their best to put you off using their services! When the work comes back, just give them a ring to let them know that they can print work prepared on an Atari ST!

Before sending off your PostScript files, check out the ReadMe file on your FSP3 disk - there are some bugs in the printer driver that you will need to work around. There are also some bugs in the PostScript driver not mentioned in the ReadMe file which are less easy to get around (opaque text frames becoming transparent or acquiring an unwanted tint), so it may be wise to get some

pages proofed on a PostScript laser before committing a large job to expensive bromide or film. The front cover of ST Applications is laid out with FSP3 and printed by AL Publishing Services in London for just £4 per foot of 1270dpi bromide. You can use all of the fonts supplied with FSP3 - even those that do not yet have Ultrascript outline fonts.

Protext 5

Proportional Printing

In Protext Version 4, it was sufficient to use the command '>PP ON' for the text to be printed proportionally. Because Protext 5 allows multiple proportional fonts, this is no longer the case. There is a set of rules which define which font is used when a document is printed and, if there is no embedded 'proportional print' printer command at the beginning of the text, the default is to use non-proportional print. There are 3 ways to overcome this:

1) Use the 'proportional print' printer command at the beginning of the text.

2) Use the '>FDP' (Font Default) command at the beginning of the document.

3) Put a 'FDP' command in the printer driver.

The last solution will obviously effect the change for all documents, although it can be over-ridden using the '>FD..' command in individual documents. This tip is for the people who, like me, prefer to play with new software before they read the manual, and I hope it saves them the frustration that I went through trying to get proportional printing out of Protext 5!

Andrew Paterson

Touch Up Upgrade

I have just received the latest upgrade of Migraph's Touch-Up software version 1.6, just $27 direct from Migraph if you return the original disk. The additional features in the new version include the ability to save images you've created or scanned as IFF/ILBM (Interchange File Format/Interleaved Bitmap) or TIFF (Aldus/Microsoft Tag Image File Format version 5.0) type 'G' 32 level grey-scale picture files. In addition, Touch-Up now supports the new 16-colour palette IMG file format.

Having saved your picture in these formats the only problem comes when you try and load them back into Touch-Up; you can't, as version 1.6 will not display these formats. The only programs that I know of that will support the TIFF format are Calamus SL and the new Pagestream. Otherwise, the purchase of Retouche will be essential for enhancing and rastering such pictures.

Another piece of news which I read about in issue 28 or 29 of ST Club Newsletter was regarding a multi-sync board for the Atari SM124 mono monitor, allowing all resolutions to be displayed. A check with the Atari Workshop (071-708 5755) reveals that they have such a hardware modification in the pipeline, possibly mid February. Price unknown.

Protext version 5.04 has also been upgraded to version 5.07 which can now be used on the TT.

Graham Paterson

NeoDesk

Keith Jackson - Forum 30
Frank Hollis - Forum STA1
Paul Kaufman - Forum STA2
B A Hills - Forum - STA2

I too have been trying with no success so far to upgrade my Neodesk 2.05 (invaluable to any hard disk owner) and have not even had an acknowledgement to my second letter to Electric Distribution. Can I just point out that if firms cannot make arrangements to upgrade programs to registered users who actually wish to pay for them, then this might just encourage said users to copy disks illicitly! Or is this too difficult for Electric to understand?

I understand from Martin's article in the last issue that Spectre GCR has also been updated (to 3.00) and that this has been out for some time in the USA - so why not here?

Andrew Barclay

● Our response that the incompatibility between the NeoDesk Control Panel and Protext 5 had been fixed was premature. The problem still exists in the latest versions of both packages and the only solution is to re-boot without the NeoDesk Control Accessory before loading Protext 5.

Dropping Characters

Q I am using a Hewlett Packard Laserjet III with my ST and suffering a lot of problems with the printer dropping characters and generally jumbling the output. Any suggestions?

Rob Harris

● The source of the problem is Atari taking design short cuts; the sound-chip was not designed to talk to the outside world, and, to make matters worse, it isn't buffered. This problem has been around since the earliest days of the ST: the fix with dot-matrix printers was to swap the 1K pull-up resistors in the printer for 10K resistors. (The same kludge is required for some disk drives: the sound-chip is pressed into unwilling service here also!)

You should be able to overcome the problem by changing the pull-up resistors in the Laserjet - but DO check with Hewlett Packard first, as there are implications both technical and regarding the HP warranty.

A better idea would be to buffer the ST signals using an OCTAL line driver chip - full details of a DIY project on this were given in ST Applications issue 2.

Alternatively, employ a printer buffer between the ST and the Laserjet. The buffer is much less likely to cause the ST problems, and in turn will happily interface with the Laserjet. If you can beg or borrow a printer buffer, give this a go. The cheapest source of these I know of are Frontier Software in Harrogate.

Faulty Chips

Q Our ST 1040 has developed a fault: it can run any program that runs directly from a disk without the need to boot the machine first, but will not boot up in the ordinary way, from any normal boot disk. We were wondering if this could indicate a faulty 68901 chip. Obviously, we could be wrong - but we have managed to fix the computer before on some occasions, and hope we might do the same again! If you think this is a reasonable diagnosis of the problem, could you perhaps tell us the name of a supplier who could provide a replacement chip. We have not seen this chip listed in the electronic periodicals with the other "computer peripheral" IC's.

Paul McEvoy

A I have never seen this fault and would doubt that the 68901 is to blame. I would first of all try the MMU, then the WD1772 and the GLUE. The MMU and GLUE chips are Atari specific items and should cost around £40 and £25 respectively; a replacement WD1772 floppy controller will cost £25. If you do need one, you can obtain 68901 chips as Stock Item 642.418 from RS (0536-201234).

Paul Rossiter

Cartridge Extender

Q Is it possible to obtain an extension cable for the ST's cartridge port? I prefer to keep my midi leads permanently connected to the midi ports, but I can't do this and have my Vidi ST digitiser cartridge connected at the same time; the cartridge box blocks off one of the midi ports! I don't like removing and inserting the Vidi ST cartridge too much as this may lead to wear and tear of the cartridge or the ST's socket.

Although I probably wouldn't try making one myself (even if the parts were readily available) I wouldn't think it is too difficult a job for somebody with the required experience. I suspect that such an extension cable would prove useful to other ST users and perhaps there is one available somewhere.

D Tomes

A Silica Shop used to sell a cartridge extender for around £50; an easier and cheaper way would be to use a Frontier Software clock cartridge.

Paul Rossiter

3MBytes

I Owners of 1MB ST's (1040, Mega 1, or upgraded 520) who expand their RAM memory by 2MB normally finish up with 2.5MB rather than the 3MB that might be expected. Usually, upgraded machines cannot address the existing second 512kB RAM-bank.

The German magazine ST Computer recently published an article by K.D. Litteck showing how, by the simple addition of a small printed-circuit board and a minimal amount of re-wiring, it is possible to make use of this unused 512kB of RAM, without any additional software.

The feat is accomplished by making the new 2MB RAM Bank 0, with the old 1MB being re-positioned as Bank 1. The article carefully explains the theory and gives reasonably comprehensive construction details - though users will have to design their own layout for the small PCB (Veroboard or similar) that holds three IC gates, four resistors and a decoupling capacitor. The total component cost is under £2! Obviously, some circuit-building practice is required.

I have translated the full article and if anyone would like to receive photocopies of it please send 75p (small value stamps preferred) to: Peter West, 38 Woodfield Avenue, London W5 1PA.

Peter West

68010

I Replacing the 68000 processor with a 68010 is not as straightforward as recent correspondence would suggest. Yes, it is hardware compatible, but there is a functional incompatibility. The MOVE SR,<ea> command is a privileged instruction on the 68010, unlike the 68000. Unfortunately, the Operating System ROM contains several of these instructions which are executed in user mode. If the OS is run from a 68010, an exception is generated causing the ST to reset during the bootup sequence. I wonder if Atari will ever sort this out for ST's, as they have for the TT? (Thanks to John Dally for this information.)

Steve Jones

DMA Hard Disk

I In response to the 'User Abuser' piece in the Forum column of issue 1: the writer says that 'The Mega ST has NO such slot... it has an expansion slot of sorts but not in the way one considers slots on IBM clones. It CANNOT accept a hard drive.' In his own words, 'What utter rot'. In fact, if memory serves me correctly, Power Computing had at one point a device called the Super-A board which plugged directly on to the Mega ST expansion port and, amongst other things, provided a 48Mb hard disk! There is nothing magical about the PC expansion bus: it still requires interface circuitry on any device that uses it. This is the same on the Mega ST.

Neil Smith

● But, I presume, a hard disk in the Mega ST slot is going to require more interface circuitry than one on the DMA port; the original ST User article implied that adding a hard disk to a Mega ST is somehow simpler than it is with an STFM.

Technical Information

Q I am especially interested in obtaining a memory map of the hardware I/O area for the STE. I know that this information is available to registered developers, but as I am a student I cannot afford the £350 Developers' Kit. I am aware of the compatibility problems with future and past models that this type of programming can cause (as is Atari!), but programming is my hobby, and I wish to get the best out of my machine. Also, I have no information about programming the enhanced hardware features of the STE and where in the memory map these extra bits lie. I already own or have access to three books (ST Internals, Abacus; Atari ST Programmers' Reference Guide, Glentop; and Machine Language Programming Guide, Compute!). But they all seem to be inaccurate in this area.

I can pay a reasonable price for this information, but the Developers' Kit offering by Atari is way out of my reach.

Paul Chamberlain

Q Does anyone know how to do hardware scrolling on the STE, particularly vertical scrolling? Can one scroll both up and down? Exactly what instructions are needed, either in "C", or "Assembler", or "GFA Basic", or any other language?

Leslie W Dewhurst

● Generally speaking, all of the information you require to program the ST is available as part of any respectable programming package, or in the reference books available for the ST. At least this is the line that Atari will argue if you ask them what their position is regarding the availability of technical data on the ST. For the majority of users this is OK and their needs are met satisfactorily.

But situations do arise where the absence of a set of readily available, affordable and up-to-the-minute information direct from Atari does cause problems. The most obvious cases are the two major episodes of TOS incompatibility problems that have followed the release of major revisions to TOS, and the situation for users using PD or Shareware programming languages that are not always updated as regularly as their commercial alternatives. Additionally, it takes time for programming languages, manuals and books to be updated and re-printed; so there is a delay of some months before information required to exploit the features of new versions of TOS becomes available to end users.

As the vast majority of software is written by users and not developers, it does seem rather short-sighted that Atari restrict access to technical data with the high cost of their Developers' Kit (£350) and the non-disclosure agreement that its recipients are required to sign.

Commercially printing the vast volume of information in the Developers' Kit is unlikely to be a viable option, and wouldn't get around the problems of communicating information on new TOS versions rapidly to programmers (users, as well as developers). But if Atari made a concerted effort and put all of the information on disk, ensured that it was always accurate and up to date, and charged a reasonable cost to include regular updates, they could in one swipe eliminate one of the biggest complaints of Atari users: that Atari has an unreasonable attitude to its customers by unnecessarily restricting access to information about its products.

The input into such a project by Atari would probably consume less energy than they already put into fending off complaints about the lack of any up-to-date technical information and the 'new TOS' bad publicity stories. And they could make a profit from it.

ST Logo

Q I have had problems with ST Logo: although I can access the program itself, I cannot get any of the files or graphic examples loaded.

L Gay

A ST Logo can be used with TOS versions 1.4 and above if an alternative file selector such as "FSELECT" is used.

D B Grisdale

Gem Draw

Q Do you know anything about two programs called "GEM DRAW" and "OUTPUT.APP", mentioned in the book "Programmers' Guide to Gem" by Balma and Fitler? Am I right in thinking that they are for loading and outputting metafiles? Can you supply them and, if so, what do they cost? If no longer available, are there any other programs for such purposes?

● Gem Draw is a Digital Research product that never made it as a commercial release on the ST. For the time, it had the makings of an impressive product and a (copyrighted) pre-release version now and again crops up in some PD collections, mostly in the USA. The logical successor to Gem Draw is HyperPaint, which comes with a stand-alone output program for printing GEM metafiles. But before writing your cheque, take a look at Easy Draw.

C Matters

Keith Jackson - Forum STA2

A I am also using Sozobon C, and I, too, had some problems with 'Compute!'s ST Applications Guide'. Assuming that Keith has Sozobon C correctly set up, all he needs to do is to replace all references to gemdefs.h and obdefs.h with gemfast.h. This file contains all the definitions required by wfparts.h. The other header file Keith mentions (windows.h) should not be a problem, as it merely defines a name for the beginning of the menu tree.

Another problem Keith may find, which had me tearing my hair out, is caused by Sozobon C being more rigorous about type checking than Alcyon C. The problem arises when you try to manually code object trees for menus and dialogue boxes. The compiler returns numerous 'type mismatch' errors which I was unable to resolve. As far as I can see, any programs which incorporate dialogue trees cannot be compiled with Sozobon C. However, help is at hand. There is at last a PD Resource file construction program (on disk LAN.94). While not as powerful as commercial programs like HiSoft WERCS, it does produce resource files which work with Sozobon C programs.

Another problem arises if your programs use the APPLBLK and PARMBLK objects. While these are defined in gemfast.h, the definitions are not the same as those used by most books! However, the file can be edited to suit. I would suggest that anyone having this problem refers to the excellent 'Compute!'s Technical Reference Guide Atari ST Volume 2:AES'. The correct definitions are given on pages 113-114. This book contains a mass of vital information, and some program examples in C and Assembler (and even some BASIC, for those so inclined). It is available from the ST Club, as is Volume 1:VDI, which is just as useful. I would like to get hold of Volume 3:TOS soon, as it appears to cover the system functions in a far better way than 'ST Internals'. Perhaps it will be listed in the next ST Club catalogue? (It is now available at £22.95 - apologies for the price rise: there's nothing we can do about it! - Ed.)

One of the main advantages of Sozobon C is that the full source code is supplied. I have taken advantage of this to make the system a little more flexible. If you want to create DA's with Sozobon C, you have to run the loader program manually, explicitly naming the ACCSTART.O start-up code (which is on disk LAD*56). I didn't like having to do this, and so I decided to investigate the source code. The only file that has to be changed is cc.c. Rather than attempt to describe the necessary changes here, I am submitting the modified file and a compiled version on disk. (The files have been added to LAD*32, and will also be available on the next Disk Mag, DMG.22 - Ed.) There is no difference in operation, unless you want to compile a DA, in which case you should add the -a switch on the command line.

E.g.:

```
cc -a -O -V aesfast.a vdifast.a deskacc.c -o
name.acc
```

This can be simplified somewhat by the use of alias statements in your gulam.g startup file.

E.g.:

```
alias ca `cc -a -O -V aesfast.a vdifast.a`
```

So all I have to type is:

```
ca deskacc.c -o name.acc
```

I have also made cc.ttp instruct the loader to be verbose in operation if the -v flag is used on the command line.

I have added comments identifying and describing my alterations, as required by the authors.

Les Bessant

Zoomracks

Q I note that there is a "Zoomracks" demonstration disk in the catalogue (DEM.03). Can you supply the full version of "Zoomracks", and, if so, at what price? Is it STE compatible?

Leslie W Dewhurst

● Zoomracks 2 isn't even compatible with TOS 1.2, and so it is unlikeley to run on the STE. The package used to be available from Microdeal. The PD catalogue will be updated accordingly.

DeskJet for Macs

Nigel C Love - Forum STA2

A The Spectre manual recommends JetLink Express as a DeskJet driver. It supports all three DeskJets, and is available in the UK, cost £70-£80. It is available from some Mac dealers, and the distributor is Applied Logic Distribution, 9 Princeton Court, 53-55 Felsham Rd, London SW15 1AZ. Phone 081-780-2324. It also supports most laser printers.

For dot-matrix printers there is a similar product called PrintLink Collection. I don't know who distributes it. PD drivers also exist, but I haven't any information about them.

Daniel E Cohen

TurboJet

Keith Baines - Forum STA1

I Keith Baines is quite right about Turbojet, the Deskjet printer driver which is recommended by David Smith in his excellent Timeworks book, but which is now sold in a version which is useless for general use. This is all very mysterious as it effectively removes from sale the market leader for no apparent reason and confusion has been caused by the retailer, Softsell, being unaware of this situation. The packaging is misleading, and the product is certainly not fit for the purpose for which Keith and I bought it. It is nice to be able to confirm that HB Marketing were very helpful, as you suggested, and also that Softsell responded promptly to sort the situation out. I can thoroughly recommend the product if HB are prepared to sell the old version directly as you suggest.

I also use the Deskjet directly on the ST and in Spectre MAC mode with absolutely no problems at all using Jetlink Express as the Mac driver; it also works fine with Adobe Type Manager. I use the Deskjet and real Macs and PC's at work and find the whole system completely compatible and transparent to the user - the perfect solution to Spectre printing.

Andrew Barclay

Disk Labels

Which Way Up?

I Isn't it time that the ST Club fell in line with many other PD libraries, magazine cover disks, etc., and attached their labels so that they read correctly with the shuttered opening at the bottom? The important thing is to be able to read the labels easily during selection while disks are stacked in their box or caddy, and surely everybody stores their disks with the shutter at the bottom? (Otherwise one can't see the label very well as it starts halfway down the disk.) Also the label will be easier to read while inserting or ejecting from the internal drive.

Alternatively, use a less sticky adhesive so that users can peel off the labels and turn them round if they prefer - at present the label usually tears while attempting to do this!

What do other readers think?

Peter West

● Comments welcome; would everyone be happy if we put the disk (or is it disc?) code on both ends of the label?

Discovery Pack

● Numerous new ST users have been 'phoning and writing about problems with copying the Atari Language Disk supplied with the 520STFM Discovery Pack. Following the instructions on backing up disks in the supplied manual invariably results in the 'source disk is not the same as the destination disk' error message. Atari were shipping a single-sided Language disk, so users 'simply' needed to be aware of the need either to format the destination disk single-sided or copy the files to a double-sided destination disk. Atari fixed the problem, and re-mastered the Language disk onto a double-sided disk. But the latest trick is to supply the Language disk with an extended format that cannot be copied on the Desktop... Atari are sending copies of Fast Copy 3 to users who ring in asking how to back-up their Language Disk!

To cap this, the manual supplied with some (all?) Discovery Packs informs readers that their ST has a single-sided disk drive... Oh dear...

Maxidisk and TOS 1.6

Adrian Crewe - Forum 31

I After the upgrading to TOS 1.4 I did a quick check with my set-up and found that Maxidisk, Gulam and Sozobon C all work perfectly. Surely the STE TOS 1.6 cannot be so different from the STFM TOS 1.4? I don't see why it should be except where it has to drive the hardware enhancements in the STE.

Keith Jackson

TOS 1.4

I The ability to set a flag to auto-boot one programme per disk with TOS 1.4 is very handy (no more fiddling with Startgem), and you can set programmes to fastload (with one of the utilities in RAINBOW.ARC on DMG.18). This is the same effect as can be obtained with PINHEAD 1.7 on older TOS's but the Atari documentation suggests that desk accessories set this way can be unpredictable, and you should try them one by one to check.

I have only found this feature useful when loading AUTO and ACC programmes. Otherwise, the time saved is slight compared to the time over which a programme is run. For those who don't know, most programmes clear all of the memory before running. On a 520 you won't see a delay, a 1040 will give a slight pause, but 2.5MB means a clear wait each time a programme in the AUTO folder or an .ACC loads. The more memory and/or programmes you have then the longer it takes to boot. That is when fastloading becomes a boon.

Keith Jackson

Timeworks Tips

SR Halsall - Forum 31
Keith Jackson - Forum STA2

I I was in the middle of setting up a document in Timeworks DTP, when I suddenly realised that I required a couple of graphics to complete it. The graphics I required were in one of those files that have 20 pictures all in one picture file! Personally, I find the graphic editor in Timeworks to be quite hard work, and I was just despairing that I would have to save the document, exit, load up an art package, edit out the bits I wanted, etc., etc.

Then I remembered I had "Snapshot" in one of my accessory slots. Sure enough, all I had to do was load the whole picture into an empty frame (expand the frame and pick the page resolution to get the best image), call up Snapshot and cut out the bit required and save it as an .IMG file. This produced a bit of distortion in the browser (it cleared on clicking on the browser header). All that was then required was to delete the original graphics from the frame, and load in the IMG file, adjust the frame and Robert's your uncle.

J F McNamara

● The only advantage I can see in doing this rather than using Crop Picture in Graphics is one of memory. To save the memory, though, you need to delete the original graphics file from your document after taking your snapshot: double-click on its name in the browser and then click on Delete in the dialogue box that ensues. (DFS)

Timeworks

Not Shareware!

I An article has appeared in the January 1991 issue of PC Shareware Magazine stating that Timeworks Desktop Publisher is now a shareware product. The article implies that this follows a decision taken by GST, linked in some way to the success of DESKpress.

GST would like to make it clear that these statements are wholly untrue. The statements do not in any way originate from GST and they were made without GST's knowledge or permission. Under no circumstances has Timeworks Publisher been offered as a 'shareware' product and there is no intention to do so.

As the UK's best-selling desktop publishing product, Timeworks Publisher will continue to receive our long term commitment in development, marketing and customer support.

Joanna King

GST Software Products

Users' Guides

Q After the excellent "Users' Guide to Timeworks DTP", can someone please write a "Users' Guide to K-Spread 4"? It's an excellent programme - especially now it has the GDOS print out and graphing facilities. But I feel I am only scratching the surface of its possibilities, and though I'm sure there are short-cuts to many of the operations I perform I don't seem to have the time to delve more deeply for myself; now, with a guide giving lots of practical examples...

Bob Kirby

● Any volunteers? It's unlikely that there is a sufficiently large audience to publish a book on using K-Spread 4, but we will be happy to run a series of articles on getting the best from K-Spread 4, or any other popular software.

On a related topic, the last two Fontkit Plus Tutorials will appear in issues 4 and 5, after which we will be running a set of articles on getting the best from Signum. The Fontkit Plus articles have gone down so well that we will be re-printing them as an introductory guide to Fontkit Plus.

Programmers' Forum

Welcome to the second edition of the regular ST Applications programmers' column. Owing to the delays inherent in all publishing operations, this column was written before any letters arising from the first column were received. However, I hope to include some in the next edition, so get writing. Remember, this is a space for you *to air problems, and publish ideas and small routines, etc.*

In the absence of any discussions, this month's column will also be in the mini-review format. The subject is the AES form_do routine which lies at the heart of most dialogue box handling. I hope to explain its use, limitations and possible enhancements which might help you in your own programming projects. I should start by acknowledging some published material which I found helpful: Lattice C v5 manuals (Hisoft); ST Professional GEM Programming 13 by Tim Oren. This month's listings are for the Lattice C v5 compiler, but should be readily convertible for any other C. (Tip: in Lattice a short is 16 bits, int 32 bits.)

Form_do

Anyone who has attempted to program a dialogue box to handle user input will have come across form_do. Listing 1 is a function which seems to find its way into most of my programs which just need straightforward dialogue handling. The routine displays a dialogue box on the screen, calls form_do to process it, then removes it. Points of note are the calls to turn the mouse off while the box is drawn. This ensures that there is no unsightly mess if the mouse happens to be overwritten during the objc_draw. The setting of the mouse form to ARROW is defensive programming, to ensure that the user is never faced with, for example, the busy bee while manipulating a box. 'zoomflag' is a global variable which is set by the user in some configuration routines; if FALSE it prevents the expanding and shrinking box outlines which so annoy some users. Notice how 'cheap' this facility is in programming terms, yet it allows users to customise the application to suit their preferences.

The form_dial(FMD_FINISH,....) calls do not directly replace the part of the screen overwritten by the dialogue box, but cause the AES to send redraw messages to all applications which have windows intersecting with this area. In a basic program, this will only be the desktop tree, and so the box will be replaced by the grey/green desktop background. A hint arising from this: to force a full screen (excluding the menu bar) redraw at any time, you can call form_dial(FMD_FINISH....) with coordinates for a box covering the full screen.

As a variant on this, instead of calling form_dial, before calling objc_draw, you could blit the appropriate area from the screen into a storage buffer, do the dialogue, and then blit the data back to restore the screen. This has the advantage that no redrawing is required and so the screen update is much quicker; but you do need the memory for a storage buffer. In most cases this is probably not necessary, but if the underlying display is complicated (e.g. lots of icons, lines of text, or a picture) the enhanced performance can be well worth the effort. The AES adopts this strategy to good effect for alert boxes and drop down menus. For these purposes it has an 8000 bytes screen buffer. (This is the source of the constraint that drop-down menus may not occupy more than a quarter of the screen area: 8000 bytes is one quarter of the 32000 byte screen.) It is possible to borrow this space temporarily for your own screen save and restore data, but I would only do so if there was no other choice. Its address can be obtained by calling wind_get with the WF_SCREEN request (17). The high and low words of the address are found in the first two return fields. Make sure you do not use it when the AES might be doing so, and do not overfill it (otherwise you will almost certainly crash the machine).

Form_do is really a composite function; one constructed out of other callable AES functions. Since it uses no undocumented internal routines, it is easy to duplicate its function (Listing 2). Examining this listing makes the operation of form_do clear. Form_do is simply an event handler which distributes work to two rather lesser known functions: form_keybd and form_mouse. These primitives are not documented or supported by all language systems. Data sufficient to implement an AES binding are given in Listing 3. Notice that the order in which the form_keybd inputs are written into the Intin array does not follow their order in the C function call. This seems to be an inconsistency in the Lattice C v5.06.00 binding. Form_do also keeps track of the current text item being edited, calling objc_edit to initialise, terminate or insert characters into text fields. Note that the application menu handling is disabled while a dialogue is being processed.

Listing 2 in itself is not especially useful, but allows some tinkering with normal form_do behaviour. Tim Oren suggested one extremely useful modification, making the second argument to form_do a pointer to the current text field index rather than the field index itself. The index is updated by the modified form_do on return. Therefore, by keeping a static variable for each dialogue, (initialised to some appropriate starting object), a program can reenter a dialogue with the cursor in the place where the user left it. This is a nice touch which greatly improves the feel of dialogue boxes. To implement this, type in Listing 2, replace all 'new_edit' with '*new_edit' and name the function xform_do(). A suitable function prototype is therefore:

```
int xform_do(OBJECT *, short *)
```

Now simply declare a static variable to hold the current edit object index and pass its address to the function. The calling sequence is:

```
OLD retval=form_do(tree,TEXT1); NEW
cur_ed=TEXT1;
retval = xform_do(tree,&cur_ed);
```

One of the most annoying deficiencies of GEM is the poor control of text entry. The range of specifiers is small, and many are bugged in early versions of TOS (ever tried to press '_' on the path line of the File Selector on a TOS 1.0 machine? Result: machine locks up). Listing 4 should help with this. It replaces the system keyboard primitive and provides a greater range of options, and (it is hoped) crash-free entry of pathnames. Edit Listing 2, commenting out the form_keybd line, and uncommenting the xform_keybd line, then append Listing 4. You may need to move some of the declarations to the top of the file to keep your compiler happy.

Xform_keybd is called with a proposed character, and data about the current editing object and position. Initially, the function tests for and implements various edit control characters (escape, arrow keys, etc.) which might change the field being edited. If the key pressed is not one of these, it is checked according to a te_pvalid validation character. For speed, I have coded these checks as a consultation of a lookup table. This occupies rather a lot of space, but I feel that the performance improvement is worthwhile, particularly if you need to make the

Listing One

```
/*
** Function to draw a dialogue box centred on
** the screen, allow the user to interact with it,
** then remove it. The two input parameters are a
** pointer to the root of the tree, and the index of
** the object to start text editing at (0 if none).
** The function returns the index of the object used to
** exit the interaction. This object is deselected. The
** global variable 'zoomflag' determines whether the
** expanding and shrinking outline boxes are displayed.
**
** Usage:   exit = dialogue(tree,start_edit);
**
**          int exit, dialogue(OBJECT *, short,);
*/

int dialogue(tree,edit_obj)

OBJECT *tree;
short edit_obj;

{
    short x, y, w, h, exit_obj;

    form_center(tree,&x,&y,&w,&h);
    form_dial(FMD_START,0,0,0,0,x,y,w,h);
    if (zoomflag)
        form_dial(FMD_GROW,x,y,20,20,x,y,w,h);
    graf_mouse(M_OFF,0);
    objc_draw(tree,ROOT,MAX_DEPTH,x,y,w,h);
    graf_mouse(ARROW,0);
    graf_mouse(M_ON,0);
    exit_obj = form_do(tree,edit_object);
    (tree+exit_obj)->ob_state &= ~SELECTED;
    if (zoomflag)
        form_dial(FMD_SHRINK,x,y,20,20,x,y,w,h);
    form_dial(FMD_FINISH,0,0,0,0,x,y,w,h);
    return((int)exit_obj);
}
```

Listing Two

```
/* Functional equivalent to form_do. A simple drop
** in replacement which can be modified as required.
*/

int xform_do(tree,new_edit)

OBJECT *tree;
short new_edit;

{
    short cur_edit, mx, my, button, shift;
    short key, click, event, pos, remain;

    cur_edit = 0;
    remain = TRUE;
    wind_update(BEG_MCTRL);
    do
        {
        if (new_edit != cur_edit && new_edit)
            {
            if (cur_edit != 0)
                objc_edit(tree,cur_edit,0,&pos,ED_END);
            cur_edit = new_edit;
            objc_edit(tree,cur_edit,0,&pos,ED_INIT);
            new_edit = 0;
            }
        event = evnt_multi(MU_KEYBD|MU_BUTTON,
                    2,1,1,0,0,0,0,0,0,0,0,0,0,
            NULL,0,0,&mx,&my,&button,&shift,&key,&click);
        if (event & MU_BUTTON)
            if ((new_edit = objc_find(tree,0,9,mx,my))== -1)
                {
                Bconout(2,'\007');
                new_edit = 0;
                }
            else remain = form_button
                    (tree,new_edit,click,&new_edit);

        if (event & MU_KEYBD)
            {
            remain =
            form_keybd(tree,0,cur_edit,key,&new_edit,&key);
/* remain = */
/* xform_keybd(tree,cur_edit,shift,&new_edit,&key,&pos);*/
            if (key != 0)
                objc_edit(tree,cur_edit,key,&pos,ED_CHAR);
            }
        }
    while (remain == TRUE);
    objc_edit(tree,cur_edit,0,&pos,ED_END);
    wind_update(END_MCTRL);
    return((int)new_edit);
}
```

Listing Three

```
/* Data for form_keybd and form_button bindings */

Form_keybd

Usage: cont =
form_keybd(tree,resvd,cur_edit,in_key,new_edit,out_key);

AES function code: 55
Addrin[0] = tree: address of tree to process
Intin [0] = resvd: always pass 0
Intin [1] = in_key: keypress code from evnt_multi
Intin [2] = cur_edit: index of object currently being edited
Intout[0] = cont: 0 if exit object activated, else 1
Intout[1] = new_edit: index of new object to edit
Intout[2] = out_key: processed key value 0 for no further
action,
            else character to be passed to objc_edit

Form_button

Usage: cont = form_button(tree,cur_edit,clicks,new_edit);

AES function code: 56
Addrin[0] = tree: address of tree to process
Intin [0] = cur_edit: index of object being edited
Intin [1] = clicks: mouse button code from evnt_multi
Intout[0] = cont: 0 if exit object activated, else 1
Intout[1] = new_edit: index of new object to start editing or
            index of object used to exit (top bit set if a
            double-clickon a TOUCHEXIT)
```

Contributions

Programmers' Forum is intended to be a monthly feature of ST Applications, giving space for the raising of issues pertinent to ST programmers, for the discussion of techniques and the solving of problems encountered in different programming languages.

The column will stand or fall on the readers' response. If you want to continue reading about programming on the ST, please write to Jon Ellis at the address given on the following page.

validation more elaborate. The function communicates its results by returning an output key: either 0 if the user keypress has already been handled (arrows, etc.) or is to be ignored; or a character code, not necessarily the same as that input (e.g. case forcing). It also outputs a new editing object index if required (user moved cursor to another field). The return value is 1 unless the user pressed RETURN to activate a DEFAULT EXIT object.

The difference between xform_keybd and the system function lies in the key handling. All the normal validation codes ('9', 'X', etc.) are supported (correctly I hope), but there are several useful additions:

B Accept characters A-Z and space only, forcing lower case characters to upper case first.
H Accept valid hexadecimal digits only (0-9 A-F) with case forcing.
M As N with case forcing
T Accepts characters valid in normal TOS filenames. * and ? are not acceptable.
x As X but control codes (<32) are ignored.

These are easily added because the lookup table is in a bitmap format: the ASCII code of the character is used to index in, and a bit determined by the te_pvalid character tested to see if the character is valid (bit set if so). Adding a new validation code is simply a matter of making the appropriate modifications to the table and adding a few lines of code to test the new validation character. There is space to add two more without enlarging the table. More codes could be supported by making the table entries longwords.

Also, extended field movement keys are supported:

* Shift Left-Arrow and Shift Right-Arrow move the cursor to the beginning and end of the current field.
* Shift Tab moves the cursor up one field (ie is a synonym for Up-Arrow, rather as Tab is for Down-Arrow).

As a final flourish, any unrecognised characters from the te_pvalid string can force a call to a special validation routine which can be changed as required. This allows the implementation of highly specialised validation routines for cases where a simple table entry would not be appropriate (eg allowing + - or space for a numeric field entry). Simply make the function pointer variable _validate address your validation routine and set _valmagic to V_MAGIC to enable this feature. The routine should return 0 to cause the keypress to be ignored, or a valid keycode (not necessarily the same as that given to it).

Well, that is it for this month. I hope you find the code useful: modify it for your own projects as required. If you use this in a commercial product, an acknowledgement would be appreciated. If you have any other useful extensions to form_do, or for any other programming tips, tricks or problems, write in and share them. Submissions should be sent to the address below. Those containing large chunks of text or source code (ASCII only please, I cannot read tokenised C or BASIC listings) should be sent on disk which will be returned if an SAE is included.

Jon Ellis
Programmers' Forum
29 Ashridge Drive
Bricket Wood
St. Albans
Hertfordshire
AL2 3SR

Listing Four

```
/*
** Listing 4. The new keyboard handling function
** with more useful text validation.
*/

/*
** Some keycodes:
*/

#define ESCAPE 0x011B
#define BACKSPACE0x0E08
#define TAB    0x0F09
#define RETURN 0x1C0D
#define UP     0x4800
#define SHFTUP 0x4838
#define LEFT   0x4B00
#define SHFTLF 0x4B34
#define RIGHT  0x4D00
#define SHFTRT 0x4D36
#define DOWN   0x5000
#define SHFTDN 0x5032
#define DELETE 0x537F
#define ENTER  0x720D

#define V_MAGIC 0x31415926

/*
** Function prototypes.
*/

int xform_keybd(OBJECT *,short,short,short *,short *,short *);
short form_valid(char *,short,short *);

short (* _validate)(short *, char *, short *) = NULL;
int _valmagic = 0;

/*
** Define the large table of character properties
** used to determine character validity. Note that
** 0 is not checked because it is never valid.
** The validation codes are specified as a bitmap in
** the following format: (bit set -> character acceptable)
** MSB ..xpnaXTPNMHFBA9 LSB (. unused bit)
*/

short _valtab[] = {
0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200,
/* 1- 8 */
0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200,
/* 9-16 */
0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200,
/* 17-24 */
0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x0200, 0x2E66,
/* 25-32 */
0x2200, 0x2200, 0x2200, 0x2200, 0x2200, 0x2200, 0x2200, 0x2200,
/* ! to ( */
0x2200, 0x3208, 0x2200, 0x2200, 0x2200, 0x2200, 0x2200, 0x3BF9,
/* ) to 0 */
0x3BF9, 0x3BF9, 0x3BF9, 0x3BF9, 0x3BF9, 0x3BF9, 0x3BF9, 0x3BF9,
/* 1 to 8 */
0x3BF9, 0x3288, 0x2200, 0x2200, 0x2200, 0x2200, 0x3208, 0x2200,
/* 9 to @ */
0x3FFE, 0x3FFE, 0x3FFE, 0x3FFE, 0x3FFE, 0x3FFE, 0x3FEE, 0x3FEE,
/* A to H */
0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE,
/* I to P */
0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE, 0x3FEE,
/* Q to X */
0x3FEE, 0x3FEE, 0x2200, 0x3280, 0x2200, 0x2200, 0x1B88, 0x2200,
/* Y to ` */
0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00,
/* a to h */
0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00,
/* i to p */
0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00, 0x2E00,
/* q to x */
0x2E00, 0x2E00, 0x2200, 0x2200, 0x2200, 0x2200, 0x2200
/* to $7F */
                };
```

** Listing Four, continued.

```
/*
** Function to process the result of a keypress.
** The arguments are a pointer to the tree, the index
** of the current editable object, the keyboard shift
** state, a pointer to the index of the next object to
** go to after this, a pointer to the 2 unsigned char keycode of
** the key pressed and a pointer to the character index
** within the editable object. The function may alter
** 'next' (for moving the edit cursor around), 'key'
** (to force certain key interpretations, 0 if no work
** to be done) and 'index' (for moving about in the line).
** The function returns FALSE if the edit is over, TRUE
** if not.
**
** Usage: result = xform_keybd(tree,edobj,shift,next,key,index);
*/

int xform_keybd(tree,edobj,shift,next,key,index)

register OBJECT *tree;
short edobj;
register short shift;
register short *next, *key, *index;

{
    short new_key;
    char temp;
    char *text;

    if (*key == TAB)
            *key = (shift & 0x03 ? UP : DOWN);
    if (edobj == -1 && *key != ENTER && *key != RETURN)
        return (TRUE);
    switch (*key)
        {
        case DELETE: case BACKSPACE: case ESCAPE:
        case RIGHT: case LEFT: case UP:
        case DOWN: case ENTER:
        case RETURN: return(form_keybd(tree,0,edobj,*key,next,key));

        case SHFTRT:    objc_edit(tree,edobj,0,index,EDEND);
                        objc_edit(tree,edobj,0,index,EDINIT);
                        break;

        case SHFTLF:    objc_edit(tree,edobj,0,index,EDEND);
                        *index = 0;
                        objc_edit(tree,edobj,0,index,EDEND);
                        break;

        default: text = ((TEDINFO *)(tree+edobj)->ob_spec)->te_pvalid +
                            *index;
                 if  (*text == '\0')
                     text--;
                 if (new_key = form_valid(text,*key,&edobj))
                     {
                     temp = *text;
                     *text = 'X';
                     objc_edit(tree,edobj,new_key,index,ED_CHAR);
                     *text = temp;
                     }
                 else
                     return(form_keybd(tree,0,edobj,*key,next,key));
                 break;
        }
    *key = 0;
    return (TRUE);
}
```

```
/*
** Function to determine whether the key pressed
** by the user is valid for this position in the
** field. The function accepts a pointer to the
** current position in the validation string, the
** proposed character and a pointer to the index
** of the object being edited. It returns 0 if the
** character is to be ignored, or a character code
** (possibly modified) to be used.
** Usage:       result = form_valid(text,keypress,obj);
**              char result, form_valid();
**              char *text;
**              short keypress;
**              short *obj;
*/

short form_valid(text,keypress,obj)

register char *text;
short keypress;
short *obj;

{
    register short mask;

    mask = 0;
    keypress &= 0xFF;
    if (keypress == '\0' || keypress > 127 && *text != 'X')
        return (0);
    switch (*text)
        {
        case '9':   mask = 0x0001;
                    break;
        case 'A':   mask = 0x0002;
                    break;
        case 'B':   mask = 0x0004;
                    keypress = toupper(keypress);
                    break;
        case 'F':   mask = 0x0008;
                    break;
        case 'H':   mask = 0x0010;
                    keypress = toupper(keypress);
                    break;
        case 'M':   mask = 0x0020;
                    keypress = toupper(keypress);
                    break;
        case 'N':   mask = 0x0040;
                    break;
        case 'P':   mask = 0x0080;
                    keypress = toupper(keypress);
                    break;
        case 'T':   mask = 0x0100;
                    keypress = toupper(keypress);
                    break;
        case 'X':   mask = 0x0200;
                    break;
        case 'a':   mask = 0x0400;
                    break;
        case 'n':   mask = 0x0800;
                    break;
        case 'p':   mask = 0x1000;
                    keypress = toupper(keypress);
                    break;
        case 'x':   mask = 0x2000;
                    break;
        default: if (_valmagic == V_MAGIC && _validate !=
        NULL) return ( (* _validate)(obj,text,&keypress));
                    return (0);
        }
    if (_valtab[keypress-1] & mask)
        return (keypress);
    return (0);
}
```

CAD Column

Improve your productivity: get a hard drive. How can you afford it? With the money you saved buying a plotter, of course! Joe Connor explains...

CAD programs generate large drawing files, and so using a hard disk will save you twiddling your thumbs while saving to floppy, and will also encourage you to save your drawing more frequently.

Buying a new hard disk

As manufacturers show their products in the most favourable light possible, you should, to make a fair comparison, try to find out the average access time in milliseconds (ms) and the data transfer rate in kilobytes read in one second (K/s) with all system patches and caches turned off. Any drive with an average access time less than 40ms and a data transfer rate in excess of 500K/s is fast. 520 and 1Mb owners should be particularly cautious of drives that need large software caches to run at a good speed.

If you are not a Mega ST owner, you should consider a drive with a built-in clock. This correctly maintains the time and date of every drawing file, making it much easier to find the latest version.

Buy the biggest drive you can afford! Even hard drives soon fill up, forcing you to make (wrong?) decisions about what can be deleted to create enough room for your latest masterpiece. Finally, check the specification to see if internal or external expansion for a second drive mechanism is provided: adding a second drive mechanism is cheaper than buying a second drive.

A utility program called RATEHD.PRG which measures the speed of your drive has been released by ICD. Fine-tune your drive by trying out different interleave values. ICD allow the utility to be distributed free but not sold. If you would like a copy send me a formatted floppy and SAE. I will also include a folder of TOS 1.4 utilities. Why not send me a hint, tip or query on the disk at the same time? Disks to:

Joe Connor, 65 Mill Road, Colchester, Essex, CO4 5LJ.

Optimising drive performance

a) TOS upgrade versions later than 1.4 are faster and can utilise memory caching software. If you are using an earlier TOS version, consider an upgrade a priority.

b) Cache software is included with most hard drives, but unfortunately the information provided to get the best trade-off between memory usage and speed improvement is often complicated.

c) Size of partition: generally smaller partitions are faster. Most current driver software allows at least 16 partitions, so keep them small.

d) Interleave: determines the layout of your data on the drive and has usually been optimised for you by the manufacturer for particular drive/controller combinations.

e) File organisation: as partitions fill up and files are deleted, the remaining space becomes fragmented, and as new files are added they get scattered, slowing read/write times considerably. Keeping the CAD program and associated files in a separate small partition will optimise its speed and reduce the risk of corruption. Drawing files can be kept in a separate partition which makes back-up easy. If the partition is zeroed and restored from back-up occasionally, files are de-fragmented and read/write times are magically restored.

Plotters

Before purchasing the AO plotter the very nice man demonstrated, you should consider the following:

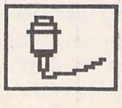
1) Large sheets are traditionally used so that small details can be physically drawn at a sensible size. All CAD software allows the user to zoom in and out the drawing, so large sheets may no longer be necessary.

2) Architects often draft at small scales anyway, so output can often be smaller or split across several sheets without problem.

3) A3/4 sheets can be photocopied, faxed and stored more easily. Some designers may be able to dispense with dyeline copies altogether.

4) Most Plot Bureaux handle DXF or HPGL formats, so a small in-house plotter may be satisfactory for your everyday needs.

The Roland DXY series of A3/4 plotters represent good value for money. The 1100 model can hold up to 8 pens and has a 'soft landing' facility which allows all types of plotter pens to be used. The 1200 model adds a digital coördinate readout and electrostatic paper hold. The 1300 model allows individual speed control over each pen from a keypad and includes a 1Mb memory buffer. Control is returned to the program much more quickly, allowing work to continue while plotting is in progress.



JARGONBUSTERS

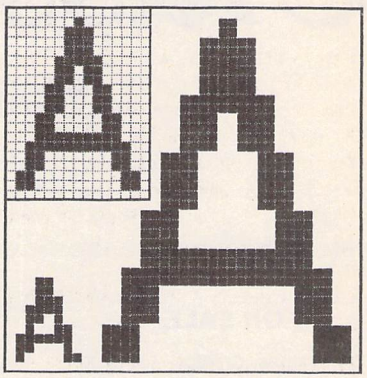


Figure 1

Pixel and Raster Graphics

Pictures are made up from individual dots called pixels. A pixel is a single dot of a screen display. The closer the pixels are together, the better the 'quality' or resolution. Raster or bit image graphic files simply record the status of every pixel. The disadvantage for CAD use is that as groups of pixels are re-scaled, resolution is lost. (See Figure 1.) To create a double-size A, the number of pixels, both horizontally and vertically, is doubled, each pixel generating 4 pixels of the same colour. The resulting character has suffered 'pixellation' or 'aliasing', often called the staircase effect. 'Anti-aliasing' techniques are employed by some programs to improve results.

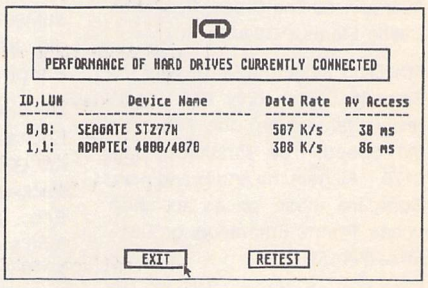


Figure 2

RATEHD.PRG is an objective measure of drive performance because it bypasses TOS and any drivers. Use it with your formatting program to optimise the interleave for your drive.

Classified Adverts

Classified adverts are free to subscribers.

Please use the form on page 58.

FOR SALE

STOS Games Creator - £15.00; STOS Compiler - £10.00; STOS Maestro - £10.00; all three together for £30.00. Scarcely used, excellent condition. Seikosha GP50A (Centronics) printer, uses 5in. wide paper, 2x spare ribbons and 3x spare paper rolls - £45.00. Camputers: Lynx 96k with extended ROM (nothing to do with Atari!) £60.00 (includes interfaces for printer and joysticks); Sanyo DR202 Data recorder - £20.00; both together for £75.00. Casio CZ1000 with Midimouse 64-voice rampack - £200.00. (Plastic earth pin for Casio powerpack broken, otherwise in excellent condition). I am clearing things I do not use and do not have to sell: please don't waste time haggling - I won't! Contact - John Henderson at 081 444 4832, after 7.00pm most evenings. (3)

Atari SF354 S/S external drive : £35 or nearest offer. Tel: 0602 253916.

The Blag (ST) - huge detective adventure on two extended format S/S disks. Features digitised graphics, printed manual and free pen: £7.99 plus 50p P&P. Apply G. Atkinson, 60 The Green, Rowlands Castle, Hants, PO9 6AB. (10)

MS-DOS System disk for your PC Emulator. V.4.0, only £55. V.4.01 (the latest version) only £78. Also PC Speed; The Emulator; only £175 - All genuine and brand new. Compare these prices to shop prices. Phone Emmanuel on 081-553-3780. (3)

Original ST Software with boxes in excellent condition: Perry Mason, Nord and Pert, Bridge Player 2000, only £6 each o.n.o. Telephone Stephen on 0782 615208. (4)

Atari 520 STFM for sale plus software and magazines. £195. Ring Phil on 0709 878095 10-8. (4)

SLM804 Laser Printer for sale. Less than 1 year old. £550 ono. Ring Phil on 0709 878095 10-8. (4)

Upgraded 520 STFM (1 Meg memory, 1 DS Drive), Ext DS Drive, SM 125 Mono monitor, Software incl: Timeworks DTP, 1st Word Plus, Basic, Utilities etc, Mags, Discs, £395. TEL: Tring (044282) 4600. (3)

Protext V.5 Word Processor for Atari STE. Unwanted Gift New £85.00. Tel.0227 768056. (3)

Supra 30 Meg Hard Disk, Excellent condition - home use only. Original packaging £350 ono. Tel (071) 328 5454. (4)

Star NL10, 9 pin Dot Matrix Printer with sheet feeder & spare ribbons. Excellent condition. Manuals and ops card. Parallel interface. £150. ono. Tel: 04243 3362. (3)

Star LC10 Printer plus spare ribbons and cover. Tel: 0322-346083 after 6pm £125.00. (3)

ST Originals for sale: Operation Thunder Bolt, F29 Retaliator, Double Dragon 2, Ghost Busters 2, Drivin Force, Chase H.Q, Stunt Car, Xenon 2 - all £8 each. Moon Walker, Super Hang-On, Dragon Ninja, I Ludicrus - all £5 each. Tel: 0635 46142 and ask for Chris. (4)

SLM804 laser. Less than one year old. New Drum. £650 ono. Ring Phil on 0709 878095 (10-8). (3)

ST Software: £5 each - Zork 1, Enchanter, Hitchhikers' Guide to the Galaxy, Nebulus, Phantasie 2, Backlash, Gauntlet, Sidewinder, Eco, Skull Diggery. £7 each - King's Quest 4, Leisure Suit Larry 2, Space Quest 2, Microprose Soccer, Carrier Command, Populous. Tel Paul on (0494) 712274. (4)

Atari top games for sale, including Midwinter, F29, Falcon, Warhead, Sim City, All boxed as new. Tel: Eves. 0489 895255. All from £10. (6)

Swift calc spreadsheet with handbook £20. Data Manager Data Base with handbook £20 (both by Timeworks) First Basic by Hisoft with handbook. As supplied with new STE £25. Oxford 0865 841383. (3)

Teco VP1814 9-pin printer. Mice NL2, Epson and IBM compatible, 180cps (DRAFT), 39cps (NL2), v. good graphics printing i.e. Signum!, Script, Calamus, etc. £80. Also Lattice C V.304 £50. Contact: Tom Kasperkienica at Queens College Cambridge, CB3 9ET (0223-335511 messages ONLY). (3)

Fun School 2 for 6-8 year olds - £9, Obliterator - £5, Leonardo - £4, Power Struggle - £4. All prices include P & P. Write to Paul, 17 Spring Road, Clifton, Shefford, Beds. SG17 5RE. (4)

Citizen LSP-10 9-pin Dot Matrix Printer with box, Manual and two spare ribbons. £80. Tel:- 0757 705376. (3)

"The Church ST User". A disk-based magazine providing a mutual support forum for those using the ST in Christian Work. Contact Revd. Joe Clemson. 091-487 6944. (4)

MPE-GEM-Forth ST ver 2.01 - £25. Forth: A Text and Reference; Kelly/Spies - £15. The Students' Forth; Glyn Emery - £4. Postage extra if required, delivered 25 miles rad. Coventry. Tel.0203 419885 Statham. (4)

ST Club Newsletters 19-31, ST User 7/87, 8/87, 10/87 to 12/90 + Most disks, ST update Spring 87, 6/87 to 10/87, ST World 1/88 to 6/88, 10/88, 2/89 to 5/90. Abacus ST Basic Training Guide, GFA Basic 2 Interpreter inc. manual + box, First Atari Book. Offers? Walker, 0422 845460. (3)

WANTED

Hard Disc Drive for 1040 STFM or information/bits to use ST506 20Mb Disc with the ST. Andrew Lea (0432) 271674. (3)

Adventure games for the ST. Especially Infocom, but anything considered. Details and asking price to Geoff Atkinson, 60 The Green, Rowlands Castle, Hants, PO9 6AB. (4)

Integrex 132 printer driver for the ST. Needed desperately! Preferably for Degas, but any suitable driver will be gratefully received. Paul 0709 813862. (3)

Swap Atari SMM804 9-pin dot matrix printer for Atari Mono Monitor. or sell for £80. Swap HiSoft C Interpreter plus K&R C Language Book for GFA Basic v3 Interpreter + Compiler. Ring Alan on 0623-654645 after 6pm. (3)

GENERAL

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

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

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

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

CONTACTS

Is there anyone in the West London area with an ST or any clubs? Contact Chris Ward, 8 Berkeley road, Hillingdon, Middx. UB10 9DU. (4)

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 in the U.K./Europe. Outside Europe, by airmail it costs £5.25/£30. Cheques made payable to S. Medley should be sent to 9 Warwick Road, Sidcup, Kent DA14 6LJ.

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Authorware

Every issue of ST Applications will feature advertisements and notices about products that are published by their authors. With the depressed state of the market for non-games ST software, many products that deserve to be published are not being taken up by publishing houses. Special-interest software, in particular, is very difficult to place with a suitable publisher. Self-publishing of software is only viable when there is a cost-effective advertising medium, or an active and responsive market for Shareware.

To get the ball rolling, there will be no charge for Authorware advertisements in the next two issues of ST Applications. From issue 4 all Authorware products will be given a free 20-word listing, and display advertisements will be available at a preferential rate. The only requirements are that the product should be of a suitable quality, ST Applications are given a review copy of the software, and the publisher/author should not be VAT registered.

Authorware is envisaged as a complimentary system to Shareware; Authorware entries and advertisements are an effective way of keeping users up to date on the features in the "registered users only" versions of Shareware packages.

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.

ST Services

- IMB fitted £60; Kit £37
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Subscription Notes

Newsletter Subscribers

If you were a subscriber to The ST Club Newsletter (£8.00), you will receive one issue of ST Applications for each two outstanding issues of The ST Club Newsletter left on your subscription. If there is an odd number of Newsletters left on your subscription then this will be rounded up.

Disk Mag Subscribers

If you subscribed to the Newsletter and the Disk-Mag (£22.50), you will receive one issue of ST Applications for each issue of The ST Club Newsletter left on your subscription.

Subscription Expired?

So long as your subscription to the Newsletter is still valid there is no more to pay until your subscription expires. Check your address label to see when your subscription expires: the first number above your name is the issue of the Newsletter that your subscription would have expired with, the second number is the issue of ST Applications that your subscription will expire with, and the third number is the number of the disk mag that your Disk Mag subscription will expire with.

Example: NL42 - STA6 - DMG-

In this case: the subscription would have expired with Newsletter 42; ST Applications subscription will expire with issue 6 (11 newsletters due - odd numbers of newsletters are rounded up); and there is no Disk-Mag subscription.

As with the Newsletter subscription, you are free to cancel your subscription at any time. If you do not want to continue receiving issues of ST Applications please let us know and we will cancel your subscription and immediately refund the unused part of your subscription.

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If you received this copy of ST Applications through the mail check the first line of your address label carefully: if it reads STA3 then either your subscription has expired with this issue, or you have been sent a free evaluation copy of ST Applications. Either way, you must take out a new subscription in order to receive future issues.

Subscriptions

ST Applications is by far the best value magazine for the ST (or any other computer?). A 12-issue subscription costs just £15.00; 12-issues would cost £18.00 if bought individually at a newsagents. Taking out a subscription saves you £3.00 (the cost of two issues), and you get guaranteed delivery direct to your door with no delivery charges.

You can also subscribe to ST Applications and The ST Club Disk Mag. 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. A subscription to ST Applications magazine plus the six Disk Mags costs just £22.50. To buy all six disks individually would cost £15.00: subscribers get a massive 50% saving off the cost of the disks! See the PD Update in this issue of ST Applications for details on back-issues of the ST Club Disk-Mag.

Back Issues

For four years prior to the launch of ST Applications, The ST Club produced "The ST Club Newsletter"; this experience has formed the building blocks for this magazine. Whilst the layout and content of ST Applications has altered, enabling us to tackle more ambitious, long-term projects and have up-to-the-minute news and reviews, you may find the back issues of the newsletter of some interest. The following is a list of the back issues available, with a brief outline of the content of each Newsletter.

Newsletter Issue 28

Reviews: Calamus, A Book on C, STOS, HP Desk Jet Plus, Fontkit Plus Tutorial - I, Football Crazy, Canvas, Goliath 2, Hi-Soft Forth. Articles: NEC P2200 Ribbons, First Steps in Prolog - I, Monitors - adding an audio amplifier, GEM Retrace, News from Japan.

Newsletter Issue 29

Reviews: Le Rédacteur v3, Citizen Swift Printer, Astronomy Lab, Hyperpaint. Articles: First steps in Prolog - II, Some thoughts upon learning C, Fontkit Plus Tutorial - II, Canadian News.

Newsletter Issue 30

Reviews: Atari Tower, K Spread 3 & K Graph 3, PC Ditto 2, PC Board Design, Lattice C version 5. Articles: First steps in Prolog - III, Calamus Comment, Hardware - DMA Port and Hard Disks, Fontkit Plus Tutorial - III.

Newsletter Issue 31

Reviews: Supercharger version 1.4, Xenomorph, Scanner Appeal, Zubair Z-RAM Board, Resolution 101, Chronoquest II. Articles: First Steps in Prolog - IV, Cupertino Cowboys, DIY Half Meg Upgrade, Fontkit Plus Tutorial IV.

ST Applications Issue 1

Reviews: NeoDesk3, Universal Item Selector III, Deluxe Paint ST, Easy Draw 3, Tristan, Two PD Adventure Games: Invasion and Darkness is Forever; Jeremiah's Journal: Adventure Probe Convention, Operation Stealth, Tamoret; Book Reviews: C: A Dabhand Guide, The Oxford Dictionary of Computing. Articles: Computer Entertainment Show '90, MIDI Hands on Show, MIDI in the UK, Fontkit Plus Tutorial V, That's Write, Hard Disk Backup, Searching Directory Trees, MIDI Software in C, Gadgets by Small, Reading CP/M disks; Regulars: PD Update 11.1, Forum, CAD Column, STicks and STones.

ST Applications Issue 2

Reviews: NeoDesk CLI, Le Rédacteur v3.03, Megapaint II, Protext v5, Jet Setters (Inkjet printer), Dr. T.'s Tiger Cub, Headstart; Articles: Whistle Stop Tour, Fleet Street Publisher 3 or Timeworks?, TeX Notes, Fontkit Plus Tutorial 6, ST Parallel Port Buffer, MIDI Software in C; Regulars: PD Update 11.2, CAD Column, GFA Problem Page, Programmers' Forum, Adventure Column, Forum, STicks and STones.

Newsletter back issues cost £1.20 each.

ST Applications back issues cost £2.00 each.

Subscription Rates

United Kingdom

12-issue subscription to ST Applications: £15.00

12-issues plus 6 Disk-Mags: £22.50

Air Mail to Europe

12-issue Subscription to ST Applications: £18.00

12-issues plus 6 Disk-Mags: £26.50

Air Mail Worldwide

12-issue Subscription to ST Applications: £28.00

12-issues plus 6 Disk-Mags: £34.50

A Subscription and Order form is on page 57.

PD Library

The ST Club runs one of this country's longest established PD Libraries for the Atari ST. Our current catalogue (version 11.0) features over 1,900 PD and Shareware disks. This catalogue is updated in each issue of ST Applications - update version 11.3 starts on page 29.

As well as getting a PD Update in each issue of the magazine, ST Applications subscribers also get at least three full-length catalogues a year, discounts on our charges for supplying PD disks (see order form on page 57), and a preferential service when requiring help and assistance in using or finding PD software.

Are you looking for a new start in life?
Or looking to improve what you already have?

Maybe Network can help.....

Network's PROXIMA dtp program is generally recognised by professional printers, publishers and graphics designers as the best dtp software available for the Atari ST. ST Apps. readers will have seen our professional-user listing in the January issue, so we won't repeat it here. Suffice it to say that Network simply doesn't just stop at selling you the software and leaving you to sink or swim.

For a start. our firm has been engaged in printing and publishing everything from newspapers and magazines, down to business cards, for forty years. Since DTP is *supposed* to be about printing and publishing, perhaps you'll agree that it makes sense, when considering your own dtp requirements, to place your faith in the ONLY printer/publisher in the UK actively supporting dtp hard and soft-ware.

For a start, we NEVER market nor support ANYTHING which we haven't used in PROFESSIONAL circumstances to our own lasting satisfaction. *That's why although we can supply certain well-known brands of hard and soft-ware off the shelf, at very favourable prices, we don't.....at least not without giving customers a "warts-and-all" breakdown of the product.* This way we KNOW we can have faith in what we are offering to the public. If and when better products come along, and WE are satisfied with them, then we'll get them to you at the best possible prices.

Apart from pride, one reason we have to try to get things right at the outset is that ALL our products are supported by a nationwide "forever" free help line. This runs till about eleven P.M. EVERY day, including week-ends. Our own business has always operated on a 24 hr. basis and we know from experience that the time things start to go wrong is just after everyone else has shut down for the day...or the week-end. *We ensure that doesn't happen to Network customers.*

Of course it costs an arm and a leg: if we sell you PROXIMA software at £135 plus VAT and you phone in with just one query, our margins are so tight that the profit on that sale has gone. Yet Network customers know that they can get free help, at any time, not just on the software they're using, but on the actual job they're trying to do with it. Sometimes this can involve phone calls stretching into hours as they go away and come back again. We don't care: the system has made us many, many new friends and we believe that they will stick with us as they expand their businesses or whatever.

Atari Products

The fact that you are reading this magazine shows you are an Atari devotee. So are we. We believe even the basic 1040 is an excellent business machine....in fact it forms the heart of our Proxima dtp package.

We are Atari dealers. And we support all Atari products, so if your hardware goes down after hours, at least you can get things moving with us, AT ANY TIME up till ll p.m. Often we can put things right with telephone advice.

We can't match "box-shifter" prices.....but *they* can't match our service. Furthermore, we give 10% off ALL Atari prices and even more off some selected items of hard and soft-ware. Each one of our network of advisors is an Atari expert, able to advise you on all aspects of Atari usage. *You may not think that's important while you're making up your mind to buy....but just wait till you've got the machine up and running and want to find your way round GEM and TOS. And wait till that happens at nine o'clock of an evening!*

At Network, service and quality are the name of the game.

Change Of Life

There are people all over the UK, and some abroad, who now know that for a very minimal outlay indeed, they can engage in a complete change of career....or establish a very satisfactory secondary income. They are people who have bought what we call our "Beyond Proxima" package. What this boils down to is setting you up as a PROFESSIONAL offset litho printer, usually working from home, though some people have expanded into shop premises. *If you're interested, we'll put you in touch with them.*

This scheme has all the benefits of a franchise scheme without the setbacks and ongoing financial commitment. Your TOTAL outlay can be under £5000. For that sum, you get what amounts to a complete *professional* print-shop, just as comprehensively equipped as the High-st. instant print shops (most of whom pay £30--50,000 for the chance, plus a forever percentage-of-=turnover commitment).

In the eighteen months this scheme has been running, with NOT ONE participant having any prior printing knowledge whatsoever, we've only turned up one deadbeat (two brothers who fell out with each other!). One retired traffic warden, working from home, turned over £15,000 in four months' working, on her own, in her living-room. Such figures aren't exceptional. If you want to know more...write and ask.

Whoops! What's this doing in an Atari mag.?

We all went for Atari for its computing power, speed and cheapness. But that isn't the ONLY way to go, now.

Network has an American subsidiary and is importing direct from them extremely fast, powerful PC compatibles at astonishing values.

Our full 386 (NOT the SX!) comes with EIGHT mb of memory; eight expansion slots; 25 mhz clock speed (Landmark speed 32 mhz); 40 mb hard drive; choice of floppy drives or both; full 102 key keyboard; super colour VGA card with 14" colour monitor. The machine is called our PROXI-MAX 3. The price? A derisory £1500 plus VAT. For £2500 we'll bundle with the 386 the most powerful dtp software on earth: PageMaker, Windows, MSDOS and Corel Draw. If you comparison-shop, you'll know just what kind of bargain we're offering. PROXI-MAX 1 and PROXI-MAX 2 are 286 machines, 16 mhz, with similar spec. 1 is £1045, 2, a tower system, is £1095, all plus VAT. All systems can be customised. All are warranted for one year, unconditionally, and all servicing is effected in the UK within 24 hrs.

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Are you wasting your valuable time setting your ST's clock?

Frontier's Forget-Me-Clock II is the answer

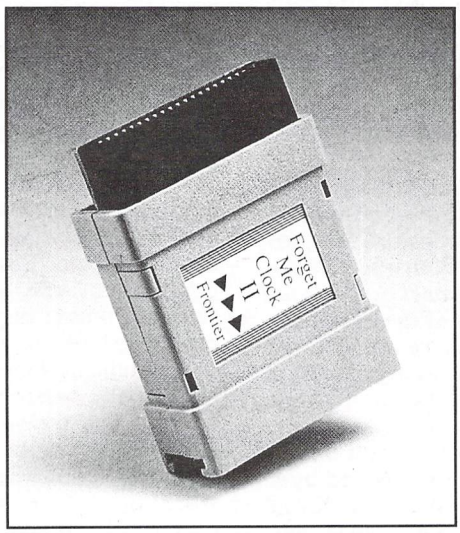
If you're one of those people who has an auto-run program annoyingly prompting you for the time and date every time you turn on your ST or STE or even worse, if you're one of those ST or STE users who doesn't set the system clock then Frontier's Forget-Me-Clock II cartridge is the solution you've been hoping for.

Just Plug It In And Go

With the Forget-Me-Clock II plugged into your ST or STE's cartridge port the system clock (used by the Control Panel) and keyboard clock will automatically be set at turn on or reset by a small auto-run program supplied with the Forget-Me-Clock II. No longer will you have to waste your time setting your ST's clock. Using the Forget-Me-Clock II also means that files saved on disk are always properly time and date stamped making finding the latest version of a file the simple task of just looking for the file with the latest time and date.

Full Pass Through

Frontier's Forget-Me-Clock II is a clock cartridge unlike any other. All other clock cartridges for the ST will tie up the cartridge port making it impossible to have your ST's system clock set automatically while still using another cartridge. The Forget-Me-Clock II has a full cartridge pass through which means that any other cartridge for the ST can be plugged into it while it is plugged into your ST. The Forget-Me-Clock II remains totally invisible so



Frontier's Forget-Me-Clock II Cartridge With Pass Through

that the other cartridge can be used normally, but it still automatically sets the system and keyboard clocks in your ST.

No Need To Open Your ST

Installing some clock cards for the ST means that you have to open your ST's case and pry computer chips out of their sockets. The Forget-Me-Clock II is a cartridge which plugs into the cartridge port on the side of your ST which means that its installation couldn't be simpler - you just plug it in and turn on your ST.

Software Included

Every Forget-Me-Clock II cartridge is supplied with time and date setting software for the Forget-Me-Clock II's clock together with a small auto-run program which automatically sets your ST's system and keyboard clocks every time you turn on or reset your ST. Built into the setting software is the facility to stop the Forget-Me-Clock II's clock to save on battery life when the Forget-Me-Clock II is not being used.

Satisfaction Guaranteed

The Forget-Me-Clock II is supplied under Frontier's ten day money back guarantee, which means that if you don't like the Forget-Me-Clock II for any reason, you can return it for a full refund within ten days of purchase. The Forget-Me-Clock II has been designed to work with any model of ST whether it be ST, STM, STF, STFM, STE or Mega ST.

Two Year Guarantee

The Forget-Me-Clock II carries a full two year guarantee which includes the battery. Battery life has been tested to be many times the guarantee period. Frontier will supply replacement batteries outside of the guarantee period for a small charge.

Price

Forget-Me-Clock II Cartridge £24.99

Price includes VAT. Please add £1.15 for postage and packing to all orders under £50.00. Frontier accepts payment by Visa or Access. Price subject to change without notice. Goods subject to availability.

Frontier Software

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