

ST APPLICATIONS

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

Issue No. 45, September 1994

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FALCON

APPLICATIONS

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Plus:

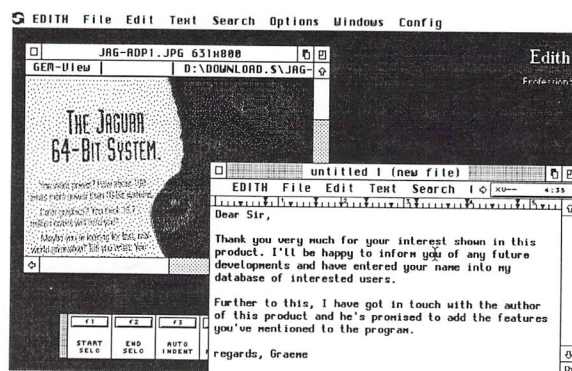
MUSiCOM 2

Kobold

£50 for a file copier? Somebody just has to be joking, surely? Well, no, says Graeme Rutt in his review of Systems Solutions' utility program. Kobold exhibits such power, elegant programming, and in-depth knowledge of computer architecture that the reviewer, himself a programmer, declares himself humbled. A pretty high-powered goblin, it seems. Full details, including speed tests, on pages 13 to 15.

MagiC

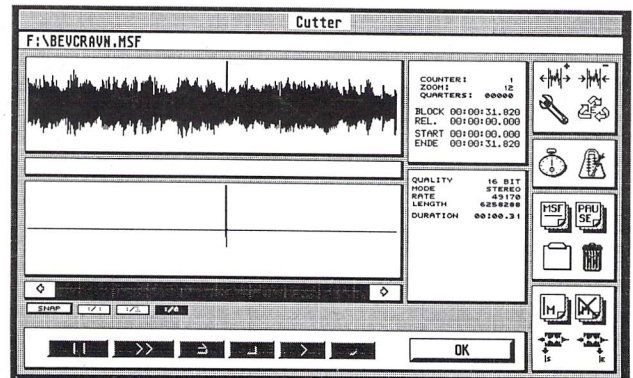
(aka Mag!X)



Do you hanker to be a multitasker? MagiC, also known as Mag!X, having started life in Germany and now available in an English version from Systems Solutions, may be the answer to your dreams. A pre-emptive multitasking operating

system, it works on any Atari machine (bar the Falcon) and is an all-in-one program that completely replaces TOS, configuring to under 250Kb of disk space and only using 300Kb of available memory. Sounds fine in theory, but how well does it run in practice? Graeme Rutt reveals all on page 8.

Graham Curtis was persuaded to buy a Falcon when he saw a demo of MUSiCOM 2 at last December's Atari show in Birmingham. He describes the software as 'extremely intuitive... a useful audio tool for th enthusiast', and sees it as a great improvement on version 1.



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Script 324 *Corsiva*
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Script 521 *Englische Schreibschrift*
Script 591 *Nuptial*

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

FaST Club
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Nottingham
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CREDITS

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Contributions

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

Compo News

SpeedoGDOS v5 is due for release any day now. This latest update is downwardly compatible with the existing *SpeedoGDOS* release and is the result of a joint venture between Atari and Compo. Probably the most notable new feature is PostScript Type 1 and TrueType font support, giving users access to a vast array of professional typefaces, all of which may be used within any program supporting *SpeedoGDOS*. Several new printer drivers are also included in this release, the most notable of which are for the colour DeskJets. A 600dpi driver for Hewlett Packard's Laserjet 4 is another welcome addition.

HiSoft are currently distributing *SpeedoGDOS* in the UK but will not be doing

SpeedoGDOS 5. The new version will be handled by Compo and is expected to cost around £59. An upgrade will be available to existing users of *SpeedoGDOS*, cost to be announced at a later date.

Two other Compo releases are expected to be on sale by the time you read this. *NeoDesk 4* has finally made it into the UK at £59 on its own or £99 bundled with *Geneva*. Upgrades are to be offered to existing *NeoDesk 3* users, price to be confirmed. *ScreenEye*, the video digitiser for the Falcon, should be available at £249 as you read this. For further details on any of the above, contact Compo Software, Unit 3, Green Farm, Abbots Ripton, Huntingdon PE17 2PF; Tel: 04873 582; Fax: 04873 581.

Edith Pro Now Available

The full commercial version of the Shareware text editor *Edith* is now available in the UK thanks to Graeme Rutt. Graeme is well known for his contributions to *ST Applications* and as UK registrar for Dieter Fiebelkorn's *GEM-View*. Following the success of that scheme, Graeme has added Annius Groeninks' *Edith Professional* to his portfolio and is to offer full support to registered users in the UK. *Edith Professional* is yet another product in the 'CIX Supported Shareware Scheme' pioneered by Joe Connor. This scheme, which should be familiar to *ST Applications* readers, allows UK users to register non-English software in the UK using British currency. In addition, Joe and friends have performed much of the German to English translations required in order to make the relevant software usable to the English speaking Atari community. The scheme has now been running for more than twelve months, has more than ten products under its belt and has attracted hundreds of registered users.

Edith Professional is a major re-write of the Shareware version, which, the author states, should now be considered free. It is fully compatible with all Ataris from the *ST* through to the *TT* and *Falcon* and is resolution independent. The program takes full advantage of the system it is running on, employing the use of a visually stunning 3D interface on the *Falcon*. It is Multi-TOS compatible and supports *SpeedoGDOS*. The software is under constant development and the current version is already well advanced, with almost every feature having user-definable parameters, and the ability to save

out ASCII text in MS-DOS, Unix or Mac formats to facilitate the porting of documents across various platforms.

The program incorporates automatic saving of files after a specified period of time, keyboard shortcuts, keyboard macros, context sensitive on-line help, a recoverable trashcan, intelligent window management, word wrap, automatic expansion of pre-defined abbreviations, iconifying of text windows, the use of multiple rulers and much more. The full *GEM* menu bar is displayed within each text window for easy access and a nice touch is the ability to import an executable file and browse through its contents in ASCII or HEX in a similar manner to that employed by *Knife ST*. You can even re-size a window or scroll through its contents when it is positioned beneath other windows! A welcome inclusion is the ability to display text at a number of different sizes, making *Edith Pro* the ideal choice for the partially sighted.

Edith Professional costs £35 and comes complete with a printed manual. An introductory price of £22 applies until 30th September 1994. If you want to try before you buy, you can get a free demo of *Edith Professional* by sending a blank disk and return postage to Graeme. A full review will appear in a future issue of *ST Applications*. Cheques should be made payable to Graeme Rutt and sent to

Edith Registrations,
4 River Terrace,
Washbank Road,
Eynesbury,
Cambs. PE19 3QL.

Read Me 1st

If your subscription to this magazine has expired with this issue, you will find a renewal form included in this mailing.

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

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12 issues + 6 D/Mags :	£40.00	£48.00

Subscription and Order form will be found on page 57.

Overseas Distribution

We no longer use Worldwide Magazines. Overseas readers and retailers should contact us for details of new distribution arrangements.

Disk Mags

These are bi-monthly compilations of the best PD software to come to our attention in the preceding couple of months - not magazines on disk. The next Disk Mag, DMG.43, will be dispatched with issue 46 of *ST Applications*.

Future Shock

Future Publishing, the company behind *ST Format*, are up for sale. In a surprise announcement, *Future's* founder and Chief Executive Officer, Chris Anderson, announced to staff that he intends to sell the company lock, stock and barrel. It appears that he has been concentrating on the US side of the business (GP Publications) and has not been in a position to devote as much time as he would have liked to the UK operation.

There is no shortage of interest in the

company, which produces around a dozen magazines across several different formats, and that's despite its expected worth being around £50 million! *Future Publishing* is a very lucrative investment with profits exceeding £2 million from a turnover of around £41 million in their last posted financial results. However, whether or not *ST Format* will continue to be produced following a buy out remains to be seen, especially considering the decline in sales of *ST* magazines over the past year.

Falcon FacTT File Welcomes TT Owners

With immediate effect, Falcon Fact File are now accepting membership applications from TT owners. It is a well known fact that TT owners have enjoyed little support from any source within the UK and the lads at Falcon FacTT File (notice the minor change in name!) are now offering their services in an attempt to remedy the situation.

For those of you not already familiar with Falcon FacTT File here's some details. FFF is a self-help group run by Atari enthusiasts Colin Fisher McAllum and Kevin Beardsworth. William Hern, Paul Glover and others helped the group get off the ground just before Christmas last year. It is modelled on *ST Register* which was run by William in the days before the emergence of user groups and its aim is to put users with similar interests in touch with each other.

Membership of FFF is completely free. Just send an SAE (or international reply coupons if you live outside the UK) to the address below for a membership questionnaire. The questionnaire

asks you about your hardware and software set up and what you use your Falcon or TT for. Send this back with a blank disk and return postage. You will then be sent a copy of the Falcon FacTT File which has been incorporated into a customised version of Roger Derry's NameNet software. It lists the details of all members of FFF as well as containing news, reviews, comments, hints & tips and classified adverts. The disk is updated every couple of months and you can have an up to date copy at any time by sending a blank disk and return postage.

Falcon FacTT File has members across the globe and is an ideal way of keeping in touch with others who share similar interests. It will also prove invaluable if you encounter a hardware or software problem as you can match up a member with the same setup and give him/her a call to discuss your problem. For further information and a membership questionnaire, send a stamped addressed envelope to The FFF, 11 Pound Meadow, Whitchurch, Hampshire RG28 7LG.

Best Deals

Best Electronics made another trip across the Atlantic for the recent Bristol and London Atari Shows. As most *ST Applications* readers will be aware, Best are probably the biggest stockist of genuine Atari spare parts in the world. In addition, they stock lots of obscure add ons for Atari computers, which are not available elsewhere.

The good news for everyone awaiting word on issue 10 of their catalogue (which has been in preparation for over two years) is that it has finally gone to the printers. As I said in issue 41, *Best Electronics* have recently purged their UK mailing list. If you did not receive a letter from them a few weeks ago, the chances are that you're not on the updated list. All you have to do is write to them asking to be put on their mailing list and you will be informed when the new catalogue is ready and how much it will cost.

The latest product news from *Best Electronics* is that the Barracuda '040 upgrade board

for the Falcon is still behind schedule. The current hold up seems to be due to licensing problems over Falcon TOS with Atari. The board itself is now finished and ready to go on sale as soon as these difficulties are ironed out. More details on the Barracuda 040 can be found in issue 42 of *Falcon Applications*.

Some of the more recent additions to *Best Electronics'* range include the Deka II improved IBM keyboard interface for the ST/E and Falcon, MegaSTE/TT keyboard mylars, LOPS for the TTM195 and SC1435 monitors, Portfolio keyboard mylars, 6ft extension cables for Jaguar controllers, STE DMA chips, spare parts for Lynx I & II and Jaguar 24-pin audio/video port interface connectors. For further information, contact *Best Electronics*, 2021 The Alameda, Suite 290, San José, CA 95126, USA; Tel: 010 1 408 243 6950; Fax: 010 1 408 243 8274.

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For users of Atari ST & Falcon computers

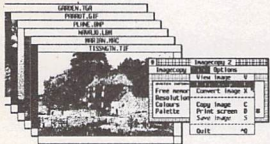
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ST Applications

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Falcon News

Compo On The Falcon

MUSICOM 2, the latest upgrade to Compo's direct to disk recording software, is now available. Version two sports a new interface which makes use of a multiple window menuing system. All the tools are now represented as icons within a window as well as being selectable from the drop down menus. MUSICOM 2 supports two-track editing and incorporates an impressive ten-band graphic equaliser. The inclusion of DAT support is also a welcome boost, allowing samples to be loaded, reworked and saved direct to tape drive, thus conserving valuable hard drive space. However, it should be noted that a digital interface such as Steinberg's FDI is required in order to make use of this feature.

Some of MUSICOM 2's other features include the ability to string several short samples together to make up a song, extensive editing features (including the ability to mark up to 64 individual blocks within a single sample), the incorporation of several filters which may be applied to your sample, and the use of oversampling, which effectively allows samples to be converted from one resolution to another (e.g. 49KHz to 25KHz) and from stereo to mono. MUSICOM 2 costs £79 and existing users of MUSICOM 1 can upgrade for £29.99.

Compo have another Falcon specific release in the form of **TrakCom**. Unlike MUSICOM, TrakCom is not a direct to disk sampler. Instead it takes samples created by direct to disk samplers such as MUSICOM, WinRec and the likes, and allows you to arrange them into your own ten track compositions.

It works in a similar way to soundtracker programs in that it transposes samples at different pitches to create the different musical notes required from each instrument. However, that's where the similarity ends. Tracker programs are, with few exceptions, four channel sequencers, whereas TrakCom supports up to a maximum of ten tracks. When used in conjunction with a digital interface such as Steinberg's FDI, it supports professional quality output to DAT tape at 48KHz. TrakCom

should be available as you read this. Expect the price to be around £79.

PACE Maker From BSS

Black Scorpion Software's **DEXtrous** is nearing completion. Since our first mention of the product in issue 38, many new features have been added, perhaps the most significant of which is **PACE**, a complete operating system replacement with multi-tasking capabilities. Not only is DEXtrous an advanced file management system, it is now a direct competitor to Geneva, Mag!C, Multi-TOS and the rest of the growing myriad of multi-tasking operating systems available for the Atari.

PACE is a modular operating system, so it is envisaged that several new modules will be released in the future. Already under consideration are modules offering hard drive compression, fast file copying and hard drive tools incorporating file backup.

DEXtrous is not GEM based—in fact the PACE operating system incorporated within it completely replaces GEM. However, GEM programs are still loaded in a conventional manner and are fully compatible with the new system. Black Scorpion are hopeful that once programmers see the versatility of PACE in action, they may wish to adopt it as an alternative to GEM and they are considering releasing full details of how to write PACE programs, to any interested party.

It is claimed that DEXtrous operates faster in 256 colour mode than the GEM Desktop does (with NVDI installed) in 16 colour mode. A number of NEODesk 4's new features such as using a picture as a Desktop backdrop and organising files into logical groups are also present. In addition, DEXtrous offers the option of using textured patterns for window slider bars. The example they give is a wood Desktop with stone slider bars as shown in the accompanying screenshot. Weird but effective!

DEXtrous has been designed in such a way as to allow you to move into directories and look around, much like a recursive cyberspace. Its built in file viewer allows most graphic files (includ-

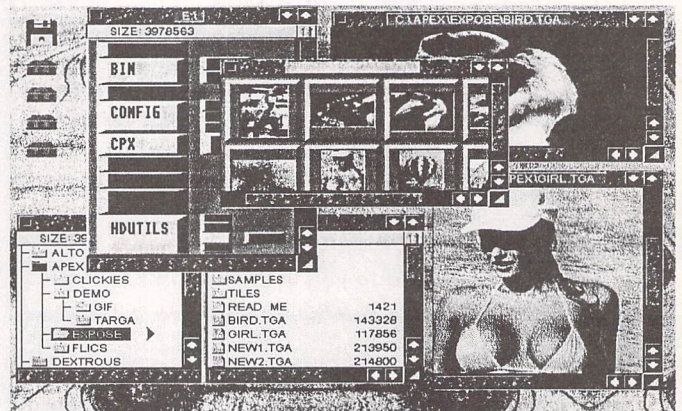
ing the older ST file formats as well as GIF, TGA and others) to be viewed directly to the screen. It also supports the showing of animation files in SEQ and FLI formats as well as the playing of soundtracker MOD files. In addition, GDOS and CFN font files can also be displayed. No longer do you require separate viewers/players for each individual file format. Any format not currently supported can be viewed as ASCII or HEX.

Icons can be produced from any picture file, creating a miniaturised version of the graphic itself (commonly referred to as 'thumbnails'). This means that after creating the relevant thumbnails, individual graphic files can be

viewed in miniature by simply opening the directory in which they reside, making it much simpler to locate the file you require.

DEXtrous is due for release within the next few weeks with an expected price tag between £39.95 and £49.95. Black Scorpion Software intend to develop an ST/TT version at a later date.

Also expected any day now is BSS Debug, the symbolic debugger for the Falcon at £39.95. A full roundup of BSS Debug's features was given in issue 38 of Falcon Applications. For further details on either product, contact **Black Scorpion Software Ltd**, 6 Witherford Way, Selly Oak, Birmingham B29 4AX; Tel./Fax: 021 414 1630.



More On Jaguar CD

The technical specifications for Atari's **Jaguar CD-ROM** unit have recently been released to the press. It incorporates a double-speed CD-ROM mechanism with a 790 Mb storage capacity (unlike a standard CD which holds 660 Mb of data). An in-line cartridge slot allows the Jaguar to access cartridge and compact disc simultaneously. The forthcoming CD title **Blue Lightning** will make use of an optional cartridge to save high scores, mission status and character information. Other titles are expected to follow suit, especially since the same cartridge can store data from several games.

The Jaguar CD-ROM supports a sustained data rate of over 350K per second and the incorporation of CinePak technology (see news article in issue 36) allows full screen, True Colour, full motion video with audio, running at 24 frames per second, to be incorporated into CD based games. Full length Video CD movie titles are also supported by means of an optional MPEG full motion video cartridge.

Probably the most unusual feature of Jaguar CD-ROM is its built-in Virtual Light Machine which was designed by Jeff Minter, author of **Trip-A-Tron** and **Colourspace** (on the ST) and more recently **Tempest 2000** (on the Jaguar). VLM allows the user to play audio CDs on the Jaguar's CD unit and accompanies the music with an elaborate on-screen visual display. It produces a spectrum analysis of all incoming sounds and translates these into somewhat impressive visual effects. This is all done in real time, so the light show is in perfect synchronisation with the music.

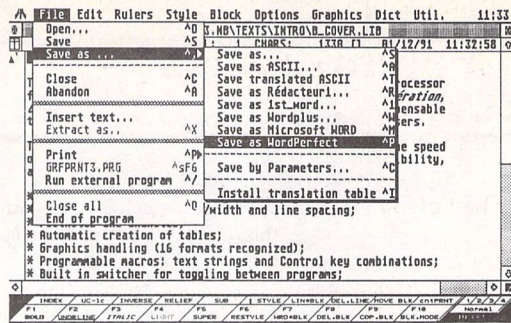
The Jaguar CD-ROM measures 6.5"x10.5"x3.5" and weighs in at 1 lb 10 oz. In addition to **Blue Lightning**, other titles scheduled for release on CD by the end of the year include **Battlemorph**, **Jack Nicklaus Golf**, **Highlander**, **Creature Shock**, **Demolition Man** and several as yet un-named third party releases. UK pricing and release date for the Jaguar CD-ROM have yet to be announced.

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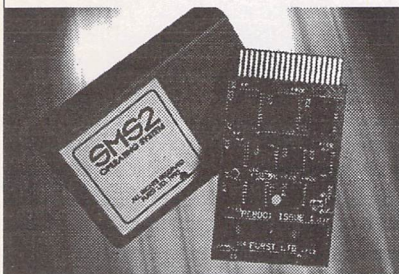
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MagiC

Reviewed by Graeme Rutt

For a computer which sported such an advanced graphics user interface (GUI) at such an early age, real multi-tasking has been a long time coming. From a slow start, the PC clones caught up and superseded our beloved TOS, in the form of a little package called Windows 3.1.

Now a software house in Germany has decided to take the power back—even though, at this late stage in the day, there's no chance that Atari will gain the World Domination that their hardware and software deserve. Such is life.

MagiC (aka Mag!X) is a pre-emptive multitasking operating system, which works on any Atari machine (except the Falcon). Unlike the competition (see boxout) MagiC is an all-in-one program which completely replaces TOS. This has far-reaching implications for the speed, compatibility and error handling capabilities of the MagiC system.

MagiC comes on one double-sided disk, with one of the slim manuals that are becoming common in the English-speaking Atari market. There's an install program, to make configuration a breeze, and the whole configuration takes well under 250KB of disk space. Neither is MagiC a memory hog. It takes up only 300K of available memory, an important consideration if you want to run more than one program at once. All in all, MagiC is an extremely well-presented operating system—but how well does it work in practice?

The Pudding

When MagiC is first run it boots up its own desktop, called 'MAGXDESK', which was a surprise in itself. I'd been told by various people that this desktop was, to be blunt, rubbish. Now, whilst it certainly isn't a Gemini2 it's competent and could give the TOS 2.06 desktop a run for its money.

It looks, and works, much like the 2.06 desktop, allowing you to put programs on the desk, drag data files on top of them and all that jazz. Whilst we're on the subject of the desktop, it's worth mentioning that both Gemini2 and Ease (not available in the UK yet) both work very well with MagiC, unlike Neodesk which shows up its general lack of compatibility and doesn't work—although, to be fair, the next version of Neodesk is meant to be MagiC compatible.

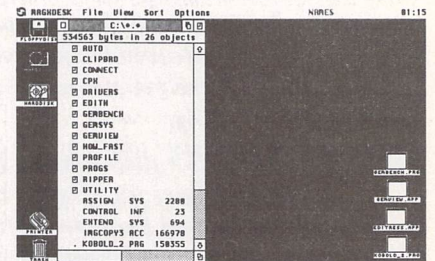
The desktop offers a couple of features that are essential to a multi-tasking operating system. The first is a special kind of pull-down menu which gives you control over which application's drop-down menu is shown—effectively making that the top application. It also gives you the power to hide applications and to tidy up the screen if a rogue program messes it up.

The other facility is a little more esoteric, of interest to everyone but only fully understandable by low-level programmer types. Hitting ALT-CTL-Escape flicks up the Program Manager which shows you info on the applications running, their IDs, which GEM events they're waiting for, what events they're able to accept and how much memory they're taking. The program manager also offers another method of switching application and, importantly, the ability to open any deadlocks which might have halted the system.

A number of other utility programs are supplied with MagiC. One is the MagiC configuration CPX and covers a number of options, such as fastload, TOS compatibility and pull/drop-down menus. Another CPX gives you control over some of the low-level parameters that affect a multi-tasking system (see 'Multitasking' boxout).

LIMITMEM.TTP is a TOS-based program which limits memory supply to any programs that take all the memory—a definite no-no in a multi-tasking situation. Quite why the MagiC

FUTURE TOS



The MAGXDESK desktop—as well as being very TOS 2.06, you can also drag multiple files into applications!

programmers decided to make this one a TOS-Takes-Parameters program rather than a nice GEM utility I don't know—it sticks out like a sore thumb.

MEGEXAMN.TTP provides the user with a highly detailed account of memory usage—probably too highly detailed, but I'm sure it'll be of use to some of you with low-level hackery in mind. Finally, we have VT52.PRG, a clever little program which acts as a GEM shell for any number of TOS programs. Put simply, it sticks TOS programs—which normally take up all the screen—into a GEM window to make them multi-tasking friendly.

Obviously, this slows down output and input—but not by too much—and generally, it works very well. I tried it out with a very nasty TOS program I wrote years ago and everything worked as it should. The only problem, in fact, was that my program used Alt-Q for some esoteric function and VT52 jumped in and used it to quit.

The Eating

Okay, so we have a nicely presented multi-tasking OS, with a pleasant desktop, with great control features—but what we haven't mentioned yet is how well it works in practice.

There are two sides to be looked at: compatibility and usability. Compatibility will always be a problem, especially in the Atari world of multiple versions of TOS, a general lack of standards and (let's face it) some extremely dodgily written programs. Additionally, there's the fact that many programs were written before Atari multi-tasking was available.

On the face of it you'd expect that hardly anything would run and the whole thing would be a bloody disaster area. Not so. As with the

Multitasking

You must be pretty bored by now reading about the different kinds of multi-tasking, what it is and what it can do for you. So here's my own quick guide:

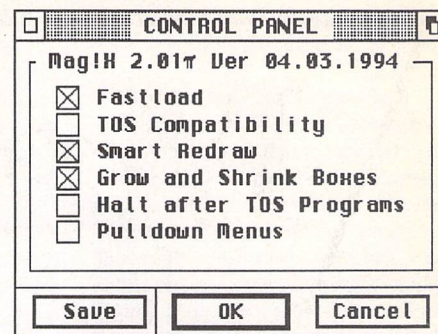
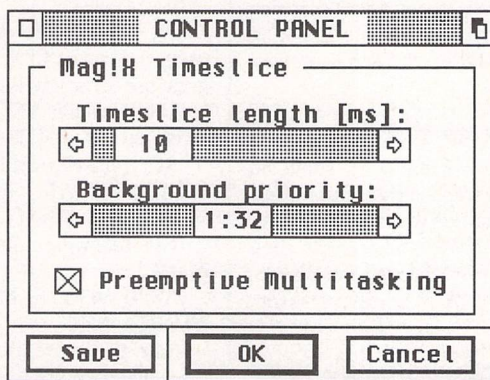
Multitasking comes in two forms, co-operative and pre-emptive. The former depends on programs entering a system call, at which point the co-operative OS will switch applications. Pre-emptive multitasking is a system whereby the OS will switch applications after a pre-determined time—irrespective of what the present application is doing.

Pre-emptive multitasking has some important advantages over co-operative. Programs don't hog processor time if they're off doing something that doesn't require a system call and everything runs, generally, much smoother.

MagiC is a brilliantly programmed pre-emptive system. It loses less than 1% of processor time to task management—running a single program under MagiC will be no slower than running it under standard TOS. In fact, it will probably be faster.

Neither does MagiC use static time slices—it will allocate more processor time to the program the user is typing or clicking in. However, when the user isn't directly accessing the top program more processor time is given to background programs—nice flexibility.

MagiC also gives the user control over the multitasking by way of the TSLICE CPX (see graphic, right). The top slider controls the amount of time before an application switch and the bottom one controls the priority between the foreground and background program(s). It is also possible to go co-operative by turning off pre-emptive tasking—but I'm not sure why anyone would want to!



The MagiC config CPX



The special program control pull-down menu: switch top applications, hide them or tidy up the screen.

Falcon, compatibility problems are rare. That said, if your favourite program is one of the few that won't work MagiC may not be a worthwhile consideration—see the 'Problem Programs' boxout below.

Usability—the extent to which you can use a multitasking operating system for real multitasking purposes—is a subject open to a number of variables, highest amongst them being the amount of memory, basic speed and disk capabilities of your machine.

The MagiC manual suggests 2MB RAM as a minimum and suggests that a hard-disk be used, but MagiC is perfectly happy to work

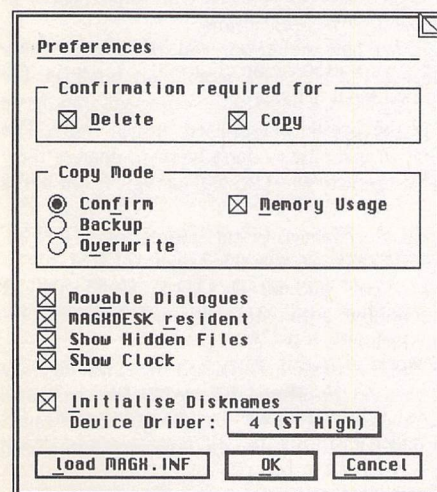
from a floppy disk system. I'd suggest that whilst 2MB is fine for multi-tasking some smaller programs 4MB is the best alternative if you want to run some of the larger applications, such as GEM-View, Calamus SL, DA's Vector, etc.

Which leaves us with the speed required to effectively multitask using MagiC. Well, I'm pleased to be able to report that MagiC works surprisingly well at the basic 8MHz. Obviously, different functions and programs have different system overheads and affect the speed to a greater or lesser extent.

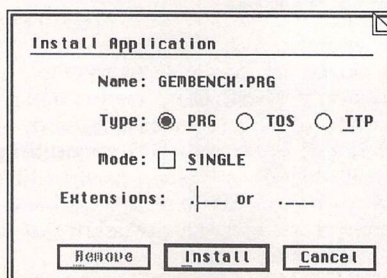
Disk access, for instance, can slow the

entire system down quite drastically and a GEM event—say moving a window about—will lock up GEM entirely until you release the window. But these things aren't too important—the meat and drink of multitasking, say downloading a file whilst typing a text file, or archiving a few MBs of files whilst loading a picture in GEM-View, are all done at a pleasantly fast speed.

It's at this point that the OS re-write really comes into the fore—all of the input/output functions have been re-written to provide the fastest possible access. The serial port routines in particular are very impressive, showing lit-



The MAGXDESK Extended Preferences screen.



Install Applications—note the Single Mode for those problem programs.

Problem Programs

Whenever a new operating system comes out, whether it's Atari made or third party, there are always compatibility problems. The following are programs with definite problems—it is not an exhaustive list and if you have a few favourite applications you want to run under MagiC you'd be well advised to ask Systems Solutions first, before you buy it, as to their compatibility.

Definite Problems:

- Deskpic accessory
- DA's Layout
- Calamus 1.09n
- First Word Plus
- Cubase
- DBase
- Protexit

Require Patches (from Systems Solutions):

- Calamus SL
- All HiSoft Editors

tle speed decrease even when another program is being multitasked on top of them.

Response to user input is always reasonably quick, obviously depending on how much you're doing. In general I found that, even on 8MHz, running two programs caused little or no noticeable change in the speed of user input. Naturally, there will always be some impact—especially to background operations—but MagiC is definitely usable.

The Proof

These things are all naturally subjective and a little hard to quantify. However, as well as offering you my opinion of it I've tried to delve a little deeper into the nuts and bolts of what it offers. I've primarily used Ofir Gal's splendid 'GEMBench' benchmark program and the figures it's given me make interesting reading (see the Benchmark boxout).

For instance, MagiC gives a speed increase in graphical output over that of my machine's standard TOS (1.62). Further, it even gives a speed increase over my machine and NVDI

installed. This is quite phenomenal, giving a 300% increase in graphic speed over a standard STe.

Disk operations don't seem to be any faster than in my standard TOS, which is a shame but hardly a surprise. With one of the slow TOSes—anything up to 1.2—you'll find that MagiC is much faster than your standard OS. In fact, the guys at Systems Solutions are pushing MagiC as an alternative to a chip-based OS upgrade.

When you come to think of it this is a great idea—MagiC takes little time to load, not too much memory and gives the user the benefits of a faster TOS and a much improved desktop. Even if you aren't planning on doing too much multitasking MagiC might be an excellent way forward.

The Written Word

The manual, running to some 80 pages, is a competently written piece of documentation which will give any user, at any level, all the info they require. It runs through installation, using the MAGKDESK desktop,

Programming Info

Some 25 pages of the manual are devoted to programming information for developers who want their programs to take advantage of some of the OS extras that MagiC provides. Generally, MagiC is compatible with MTOS but there are some differences and not all functions are covered.

The applications programmer has to look for a cookie called 'MagX' to find out if MagiC is the installed OS. This cookie, in turn, has a structure like this:

```
typedef struct
{
    long          config_status;
    DOSVARs      *dosvars;
    AESVARs      *aesvars;
} MAGX_COOKIE;
```

config status is the configuration bit-vector, which is controlled using the config CPX. The others are system value structures, of great use to the low-level programmer in particular.

The following AES functions have been either implemented or enhanced up to MTOS specifications:

APPL_FIND, APPL_READ, APPL_SEARCH, GRAF_MOUSE, OBJC_SYSVAR, MENU_BAR, RSRV_FIX, SHEL_GET, WIND_GET, WIND_SET & WIND_UPDATE

The following functions have been extended especially for MagiC:

APPL_WRITE, MENU_BAR, SHEL_PUT, WIND_CREATE & WIND_NEW

Note that there are some very small differences in these functions, compared to MTOS, so you should always consult the documentation. Also, note that the present version of MagiC does not support 3D graphical objects.

The APPL_GETINFO function is also implemented. This is an extremely important function which returns a whole host of information about the AES. It is always advisable to check any functions you plan to use with APPL_GETINFO—relying on the AES version returned is sure to cause you problems. In fact, the very first version of MagiC on sale in the UK has a problem with this—it returns AES v3.99 yet doesn't support submenus. This is why the HiSoft editors require a patch.

It's important to mention that MagiC doesn't support MiNT in anyway. There are some MiNT-like calls (to spawn programs in parallel and single mode) but all of the piping commands are not implemented. However, there are hints in the manual that this will probably change—and it gives information on checking for the various MiNT GEMDOS extensions in future versions of MagiC.

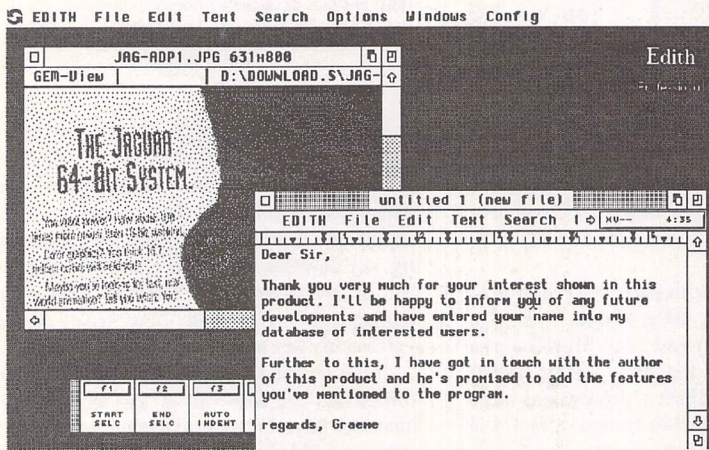
Finally, MagiC has several extensions to both the AES and GEMDOS which you won't find in MTOS. These are all implemented to be as transparent as possible to the programmer.

For instance, MagiC has new dialog box routines which handle the now common flying dialogs. The assembler bindings for FORM_DIAL and FORM_DO are exactly the same, yet they have a few extra entries in the previously unused addrin table. The upshot of which is that programmers don't have to change their code for different operating systems—TOS will just ignore the extra parameters.

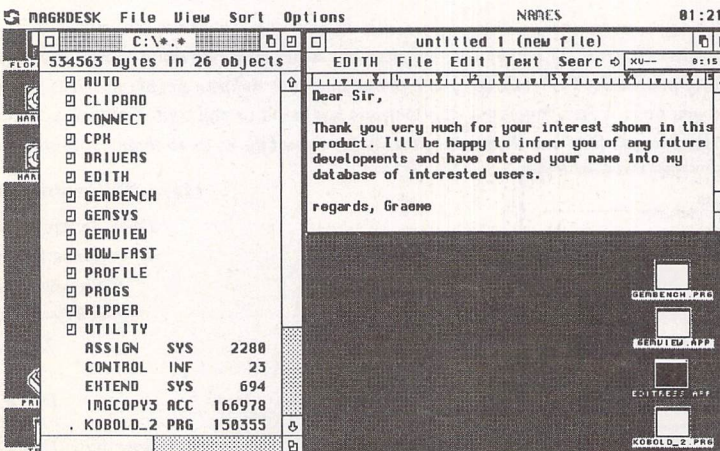
MagiC has extended alert-boxes, better control over FTEXT input fields, OBJC_EDIT has an extended call, FORM_KEYBOARD has a 'hot-key call' and all G_TITLE, G_STRING & G_BUTTON objects may have automatic keyboard short-cuts, including an on-screen underline.

GEMDOS has also been extended. Paths are more intelligently parsed, FWRITE can be used to change the size of a file, programs can use a new command 'SCONFIG' to change the MagiC configuration and the GEMDOS keyboard input routines have been enhanced.

There's lots to learn, lots of extras and the whole things has been well thought out. I don't like flying dialogs, preferring amodal windowed ones—but apart from that, I really hope that programmers take MagiC to heart and use all its new features.



GEM-View displaying a file; whilst it was processing it there was no real speed loss in Edith.



Whilst editing a text file in Edith I can happily switch back to the desktop to copy/move/delete files...

right up to the secrets of the program manager and a guide for programmers.

Okay, you can tell it's been produced relatively cheaply but in this volatile low-volume market this has got to be the way forward. At least, it's one up on the low quality Deutsch-speak manuals produced by some firms I could name.

No Problemo!

I have very few problems with MagiC—none, in fact, with its presentation, operation, compatibility, ease of use or even price. It's an excellent program that will give my Atari a whole new lease of life and has definitely stopped me from going the PC route that seems to be so common amongst the doubters.

In fact, my only problem with the package is that it won't work with my Atari—which happens to be a Falcon. This, thankfully, is being worked upon even as I type, yet is at least two months away.

I can't wait. My time spent using MagiC on my cobbled together STE system has been enough to make me fall in love with the idea of multi-tasking in general and MagiC in particular. This system gets a big thumbs up from me—take my advice and get involved in multi-tasking, it'll add a new dimension to your Atari computer.

Points for:

- ✓ Very fast, even at 8MHz
- ✓ Low memory consumption
- ✓ Very responsive

Points against:

- ✗ Not Falcon compatible (yet)
- ✗ LIMITMEM.TTP implemented clumsily

Competition

After years with no multitasking the Atari now has five such operating systems. Two are of no great interest to this article, as they don't even try to run TOS programs (OMEN and SMS2); the other two do run TOS programs and their names are surely known to you now.

MultiTOS is Atari's attempt at providing true pre-emptive multitasking for their own system. Born from MiNT, Eric Smith's privately written non-graphics multitasking kernel, this OS lumbered onto the scene well over a year ago. And there hasn't been an upgrade since. It's very slow, has the responsiveness of a dead toad and is totally unworkable on a 16MHz '030, let alone an 8MHz '000.

Geneva is Gribnif's multitasking operating system. It has one tremendous disadvantage compared to Magic in that it's co-operative, but it has several small advantages too. These mainly, in my opinion, boil down to some pretty bells and whistles. From my short time with Geneva, I wasn't too impressed, but bear in mind that it was just that, a short time—so check out a full review of it for a better idea.

Test	Time	Ratio	Statistics
GEM Dialog Box:	2.935	187%	Display: 149%
VDI Text:	3.785	148%	CPU: 98%
VDI Text Effects:	5.568	266%	Average: 135%
VDI Small Text:	3.345	181%	
VDI Graphics:	18.185	138%	
GEM Window:	1.368	116%	
Integer Division:	18.295	98%	
Float Math:	11.488	98%	
RAM Access:	6.415	98%	
ROM Access:	6.428	98%	
Blitting:	1.628	113%	
VDI Scroll:	3.395	126%	
Justified Text:	7.880	77%	
VDI Enquire:	1.685	157%	
New Dialogs:	4.858	148%	

Reference: STE
 Blitter
 FPU
 ST High
 ST Medium

Benchmarks

Here we see three GEM-Bench screen grabs showing, in order, MagiC on its own, NVDI on its own and both together. All percentages are based on the speed of a bare STE.

Test	Time	Ratio	Statistics
GEM Dialog Box:	2.168	254%	Display: 278%
VDI Text:	8.925	596%	CPU: 99%
VDI Text Effects:	2.685	551%	Average: 231%
VDI Small Text:	1.748	349%	
VDI Graphics:	6.718	358%	
GEM Window:	1.825	154%	
Integer Division:	17.985	188%	
Float Math:	11.285	188%	
RAM Access:	6.318	99%	
ROM Access:	6.318	99%	
Blitting:	1.495	122%	
VDI Scroll:	2.888	214%	
Justified Text:	4.378	124%	
VDI Enquire:	1.485	188%	
New Dialogs:	4.895	166%	

Reference: STE
 Blitter
 FPU
 ST High
 ST Medium

Test	Time	Ratio	Statistics
GEM Dialog Box:	1.378	481%	Display: 296%
VDI Text:	8.935	598%	CPU: 98%
VDI Text Effects:	2.698	558%	Average: 243%
VDI Small Text:	1.748	349%	
VDI Graphics:	6.718	358%	
GEM Window:	8.868	183%	
Integer Division:	18.388	98%	
Float Math:	11.475	98%	
RAM Access:	6.428	98%	
ROM Access:	6.428	98%	
Blitting:	1.585	121%	
VDI Scroll:	2.825	211%	
Justified Text:	4.375	124%	
VDI Enquire:	1.428	186%	
New Dialogs:	3.385	281%	

Reference: STE
 Blitter
 FPU
 ST High
 ST Medium

Product:..... MagiC
 Version:..... 1
 Supplier:..... Systems Solutions (Dulwich)
 17-19 Blackwater Street
 Dulwich
 London SE22 8RS
 Systems Solutions (Windsor)
 Windsor Business Centre
 Vansittart Road
 Windsor SL4 1SE
 Telephone:.....081 693 3355 or 0753 832212
 Fax:.....081 693 6936 or 0753 830344
 Price:.....£59.95
 £89.95 (with NVDI)
 £99.95 (with Kobold)
 Manifest:..... Double-sided disk, 70-page perfect bound user manual

Kobold

Version 2.5

Reviewed by Graeme Rutt

Every so often a utility program appears that exhibits such power, elegant programming and in-depth knowledge of computer architecture that I, as a user, writer and programmer, feel pretty much humbled. When that program is stuck with such an innocuous label as a 'file copier' and is sold at somewhere around £50 there's a very real danger that it will gain another label: 'interesting, but...'

Kobold is such a package—a high-speed file copier that works on any Atari computer. It comes on a single double-sided disk, with a 70-page A5 manual. The install program does its job well, putting Kobold and all its associated files just about wherever you want them. Nice presentation.

The Kobold executable will run as either a desk accessory or a program and everything is done in a friendly GEM Window, allowing you to either access it from any GEM program or to use it in a multitasking system. In fact the whole Kobold interface is very 'Modern GEM'—utilising windowed dialogs, window menus, popups, titled boxes and keyboard shortcuts.

The Nature of the Beast

If you take a look at Figure 1 (above right) you'll see the main Kobold window. Your source directory is on the left and your destination is on the right. Most of your work will go on in the source directory, which is where you select your files ready for manipulation. Generally the destination path is used only for selecting paths to copy to.

File selection comes in many forms. By far the simplest is via the mouse—click on a file or folder and it's selected. Click and drag and all the files you went over are selected. Click on another file and that's selected as well. Hit an already selected file and it's deselected.

It's important to note that, unlike on the desktop, when you

click on a file any others aren't deselected. Further, when you go down (or up) a directory path, no files at other levels will be deselected. For the mental well-being of the user, directories with selected files inside them are denoted by a 's' sign.

The most complex method to choose files and folders is by using the Kobold File Selector (Figure 2). Files can be chosen by their extension, their date, the date or size difference between files, or by the setting of the archive bit. You may choose files using only one criterion or any/all of them.

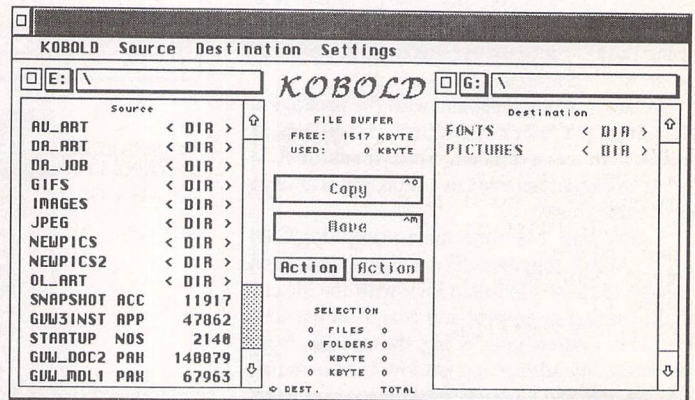
Once files are chosen they then undergo further processing—you can choose to wipe out all previous selections, you can select or deselect the chosen files, you can search down folders recursively (or not) and you can select whole folders that include chosen files.

Phew! It's much more intuitive than it looks on paper, thankfully, and it's very, very powerful. So, okay, I think I've got the point across that the methods at your disposal to select files are legion—but what can you do with them once selected?

You can rename them! Well, yes, you can—but so can the desktop, quite well, in fact. You can also manipulate their bits—write protect, hidden, system file and archive—but let's stop mucking around and get serious. You can copy, move and delete them.

And you can do it at high speed. Kobold delivers its (arguably) most potent punch in the speed stakes. Ignoring, for the most part, TOS system calls it uses its own direct access calls to get copying speeds hitherto only seen in dodgy floppy disk copiers. File deletes are pretty outstanding too—try 5MBs vaped in something like 1 second! Check out the 'Speed' boxout for some comparative tests.

However, the power users amongst you—the kind of people with 10 gigabytes of HD space, with a few set-up as GEM, some



The main Kobold window

BGM, a couple Minix based and one or two devoted to various emulators—might just possibly find that some of this exotic weaponry isn't compatible with Kobold's advanced file handler. So, Kobold also gives you the opportunity to set any logical partition to GEMDOS mode, which will use the standard GEMDOS routines.

Macro Heaven

Also in its arsenal of high-power functions lies the macro job handler. This is something akin to a programming language devoted entirely to file manipulation. Whatever you can do with the mouse, however complicated, you can do with a macro.

And don't be put off by my 'programming language' thing—although it's perfectly possible to write a macro script with a text editor you'll never need to. Just set up Kobold to record a macro and it'll turn every mouse click or keyboard shortcut you hit into a command in the script.

Kobold is delivering the power of a command line interpreter along with the ease of a GUI. It doesn't matter what you want to do with your files, you can set up a macro job to do it in no time at all. The example macros that come with Kobold can optimise your harddisk, kill duplicate files and

even backup your whole drive.

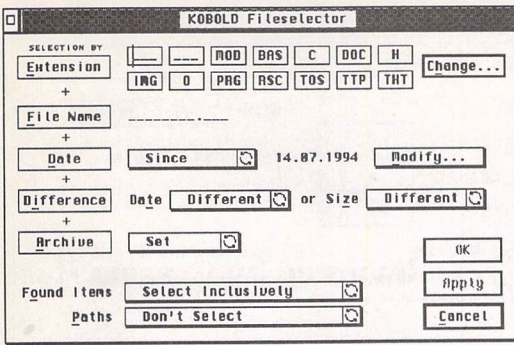
I spend a lot of time downloading files and I find that my download directory gets in a terrible mess. I decided to get Kobold to help me sort it out. In less than five minutes I had a macro that put all my GIFs into my GIF folder, all my LZH, ZIP and ARC files in my archive folder and all my TXT files in my text folder. Now all I have to do is run that macro and Kobold goes away and does its thing. Impressive.

Although macro jobs can be run from the Kobold menu there are a couple of extra programs that you can use to run them. One is a simple program that puts up a list of the jobs and lets you choose them. The other lets you set up jobs to run at any specified time. Both run as either programs or accessories.

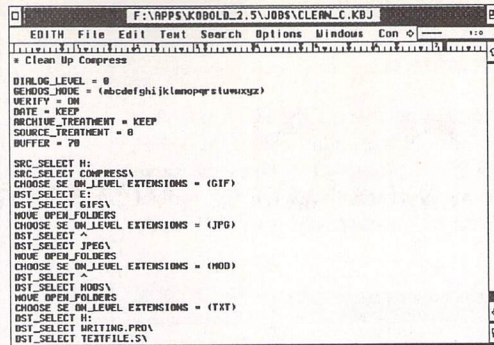
This can happen because Kobold can be sent messages by other programs. Basically, the programmer sets up a job script in memory and sends Kobold a pointer to it. This is detailed in the manual and is already taken advantage of by a couple of desktops (Gemini2 and Ease) and the Two-In-One archiver shell.

Interface Quirks

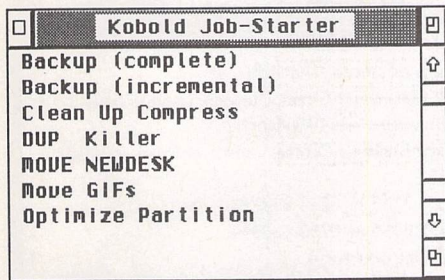
Right. We have before us a good looking, GEM Modern program which gives us file manipulation



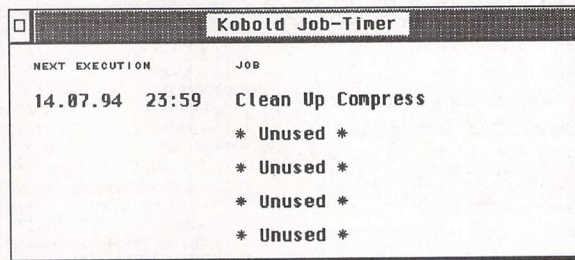
The 'file selector' — choose files in as many ways as files can be chosen by!



Here's my script file — thank the gods I didn't have to write this by hand!



The Run Macro facility — talks to Kobold to get jobs done...



...as does this one, only at predetermined times.

nirvana in under 300K. Maybe it's petty of me to pick fault with such a beast but that, I guess, is my job. Let's get two areas out of the way immediately—when it comes to manipulating files nothing matches the power of Kobold and the macro job function is superb. Where Kobold falls down—slightly—is in the interface stakes. Whilst it's mostly excellent some of it just hasn't had enough thought put into it. I'd have liked, for instance, support for GDOS fonts in the directory windows.

This reasonably easy to program feature can add so much to a GUI, making it look much nicer and also allowing many more than the standard 14 files to be shown. Also, some of the more important functions are hidden away in popup and pull-down menus. Whereas copy and move are stage centre in the middle of the window, things like delete, select all, reset marks (deselect all), swap source/destination and format floppy aren't immediately selectable. Okay, everything is acces-

sible via a keyboard shortcut but you'll need more mousework than necessary to get to them. **Documentation** The Kobold manual, running to 70 pages, is an excellent little blighter—well laid out, intelligently written and full of useful graphics. It contains all the info you could ever want to know about Kobold and is a good read, to boot. There are plenty of "explanations" as to what's going on — rather than just telling the

user what to do—and it's even printed on high quality, glossy paper.

Conclusion

Fifty pounds as an introductory offer is a lot of money for a file manipulation tool. You won't get the speed or the ease of use, but you could get the same functions from a decent command line interpreter. There is no denying that Kobold is one of the most innovative, powerful utility programs ever to be written, but the bottom line is this: do I manipulate files enough to justify a £50 outlay?

In my case, the answer is a most definite yes. I seem to spend half my life moving files from one place to another, deleting them, formatting floppy disks and doing other household chores. The functionality and speed that Kobold offers are important to me and make my computer time so much better.

If, like me, you do a lot of file maintenance and housekeeping then I can't recommend Kobold more highly. The financial outlay is well worth it and the simple segueing into desktops such as Gemini2 and Ease is the cherry on top of the pie. Kobold? Interesting, and well worth it.

Points For:

- ✓ Speed! Speed! And more Speed!
- ✓ Modern GEM Interface
- ✓ Powerful macro job function

Points Against:

- ✗ A little expensive for a casual user
- ✗ Interface quirky in places

Speed Tests

All tests carried out on a 16MHz Falcon, with TOS 4.04

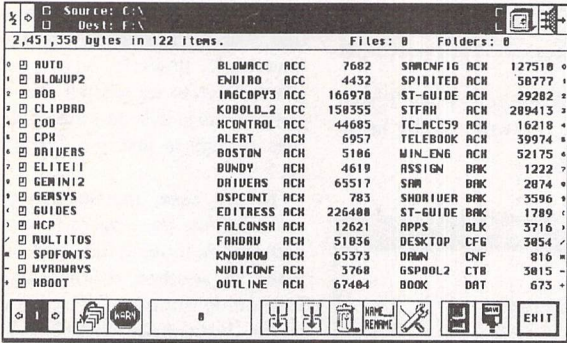
	TOS	Kobold (verify on)	Kobold (verify off)
Formatting a Floppy	100s	71s	36s
Harddisk—Harddisk			
Copying 100 Files (7 MB)	80s	16s	16s
Moving 100 Files (7 MB)	91s	17s	17s
Deleting 100 Files (7 MB)	13s	1s	1s
Harddisk—Floppy Disk			
Copy 56 files (700K)	188s	77s	40s
Delete 56 files (700K)	58s	3s	2s

My Mistake

If this was a colour magazine I'd ask the editor to print this boxout in bold neon blue on a black background with a thick gold border over-printed with the word 'Warning'. Make sure that CHK_OFLS.PRG is active in your auto folder. This program checks for file clashes (if, for instance, you're using Kobold as a DA from inside another program). I forgot to set it up and as a result lost around a megabyte of important data—since it's been in there permanently I've had no trouble at all. You have been warned!

Competition

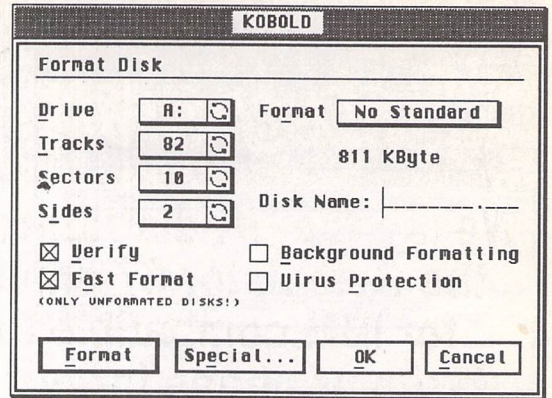
There are many file manipulation tools available to the Atari user but the one that most closely resembles Kobold is a utility called 'Maxifile', written by Charles Johnson of Codehead Software. It follows the same source/destination box idea and for many years it was my file tool of choice. However, in the current era of modern software it's sadly lacking.



No amodal GEM windows, no popups or any of the other snazzy new-GEM effects. It doesn't even give the user access to the menu

bar (although it can, admittedly, run as a desk accessory). And definitely none of the super speed tricks or job file power that Kobold has up its sleeve.

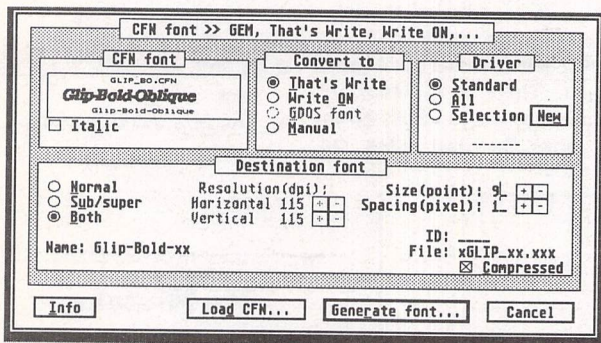
Strangely, Maxifile is handled by the same people as is Kobold — Systems Solutions. It costs £29.95, so I guess it wins in one area. But in the words of Karl at Systems Solutions, "We'll sell you a copy but we won't advise you to use it."



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 Manifest:.....D/S disk, 70-page perfect bound user manual

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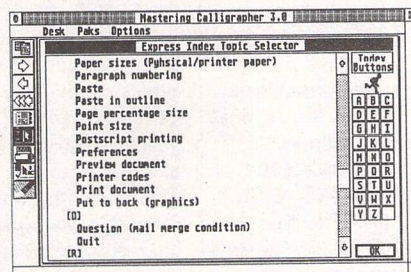
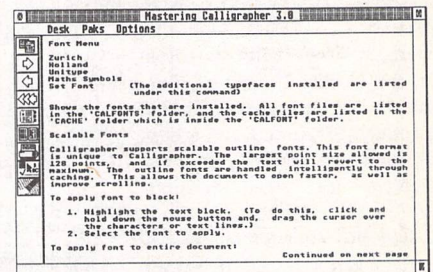
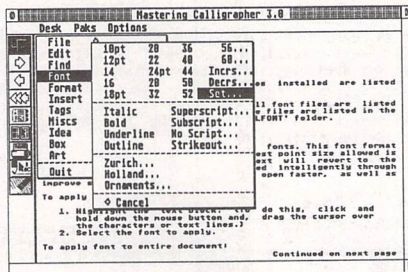
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"ST News"

Richard Karsmakers, best known inside these shores for his 'Ultimate Virus Killer' program, describes how he has spent eight years of his life editing the Dutch disk magazine "ST News", which started its existence as a pure First Word Plus file (see below) and progressed thence to its own customised super-slick shell written in GFA Basic with a liberal quantity of fast assembly language routines (next page).

A History of the Dutch Disk Magazine

by Richard Karsmakers

When I switched from Commodore 64 to the wonderful new Atari 520 ST, back in the days just prior to Easter of 1986, the machine was still in its growing times. Virtually nobody could do anything on it, nobody knew anything and everybody was bored to death. There weren't many games – stuff like Psygnosis' "Brataccas" and a horizontal monochrome shoot-'em-up called "Delta Patrol" spring to mind. The hottest demo was the Activision Retail Demo, a kind of extended slideshow featuring snapshots of programs like "N-Vision" and "Music Studio" mingled with the usual "Power Without the Price" hype. This was quite different from the '64 scene, where I had always had wagonloads of software and my computer turbocharged with EPROM applications, a faster Operating System, 30 times faster speedloaders, the works. On top of that I knew the '64 in and out. The ST was totally different. Even a basic thing such as a memory map was difficult to get. "Atari Internals" wasn't readily available yet.

I had my first ST computing experiences doing "Synth Sample I", a music'n'pictures demonstration program for monochrome monitors that I finished in May. Some of the artwork was done by myself, but all the music was either stuff you got with Activision's "Music Studio" or stuff I sort of ripped from the above mentioned Activision demo.

I did "Synth Sample I" (and the following "II", "III" and "IV") because I was bored and there were no decent demos available that ran on my system—I only had a monochrome monitor, an SF354 single sided disk drive, 512Kb of RAM and TOS on disk. It was hardly an ideal develop-

ment system. I remember playing "Brataccas" rather a lot, because you didn't first need to load TOS for it to work.

Beginnings

I was 19, and not at all satisfied with the way things were. I knew just about nobody and I had nothing. This had to change. So, in the summer of 1986, I got the idea to start a disk-based magazine for the ST, "ST News". I reckoned the sheer fact of it being disk-based would make it really cheap to produce and distribute. That way I would get known throughout the ST world and get the con-

seconds before the program could display the last screen of a 10-page text file after the vertical window slider had been dragged from the top to the bottom. It was awful, but it would have to do.

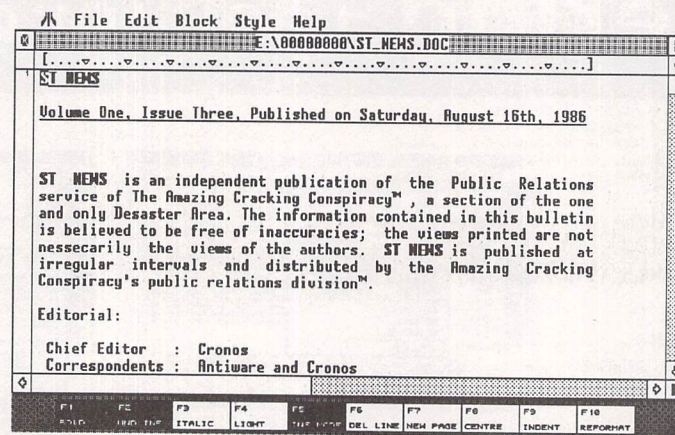
The first issue of "ST News", Volume 1 Issue 1 that was released on July 26th 1986, was a simple text file created with said word processor, about 35Kb in size. On computer club meetings it proved fairly popular, and as its size and the amount of co-writers increased it became even more so. It had entered a vicious circle that went the right way around. In the first year I met Math Claessens,

I also got a good relationship with a budding computer retailer in Amsterdam, which resulted in someone being the first to deem "ST News" worthy of press attention. This meant we got original software to review, a vitally important thing if you wanted to do a legitimate magazine. The first official foreign distributor—in Italy—was presented and a then insignificant enthusiast called Stefan Posthuma wrote his first article. Little did I expect the full impact Stefan would have on "ST News" later.

That year saw six issues, steadily growing in quality and quantity. The last issue to be spread as a document, Volume 1 Issue 6, was 217Kb in size. That was exactly the maximum size of a text file if it still was to be loadable in my own system with TOS, "1st Word" and no desk accessories in 512Kb of memory. Again, things had to change.

User Interface

In autumn of that year I had discovered another ST disk-based magazine, "F.A.S.T.E.R.". Originating from Canada, it was a semi-commercial effort by an Atari ST user group of the same name. They seriously threatened the potential success of "ST News" because, simply, they were much better. Apart from the fact that their English was better than our attempts, they also had a slick user interface where individual articles could be loaded and viewed from a pull-down menu atop a screen-sized picture. I wanted something like that, too. When people kept on encouraging me to do my own disk magazine interface and when, finally, "GFA Basic" version 1.0 and its compiler were available, I decided to sit down and do some serious programming.



tacts I was in such desperate need of.

I couldn't program well at all. As a matter of fact my original system setup caused me to get only slightly more than 10Kb of free memory in "ST Basic", which was at the time the only thing I had. "GFA Basic" wasn't yet released even though rumours of Frank Ostrowski's reputedly very fast Basic version abounded. All I had was "1st Word", a word processor that was quite awful and certainly very slow. I remember it took something like ten full

beardless adventure guru, a guy from the south of the Netherlands who's on the dole and spends all of his time solving adventures. He made sure we were the first magazine to get the complete solution to Magnetic Scrolls' "The Pawn", at the time the adventure that dropped most jaws with its amazing graphics and intelligent parser. I also met Mark van den Boer, an informatics student who did an 68000 machine code course for us and also the person who had the single biggest effect on my musical tastes. Importantly,

Volume 2 Issue 1, released on January 3rd 1987, was the first issue to have its own user interface. It wasn't perfect, some of which was caused by the "GFA Basic" compiler suffering from child diseases, but it was mine and I was proud of it. I sent copies of this issue to about 50 user groups all over the world, concentrating on Germany, the United States, Australia and, of course, the United Kingdom. This got it a lot of exposure and even procured a few additional official foreign distributors such as Les Ellingham's "Page 6" (now "New Atari User" which concentrates mostly on old Atari users).

More Firsts

The year 1987 was a "first" for many things. "ST News" got mentioned favourably in the German and English press, for example, and I did its first interview—with Jeff Minter. Also, somewhere in the summer, the first "ST News" music and the concept of "human interest" were introduced. Although this went over the top in some of the later issues, this was to be the magic ingredient that made people identify more readily with "ST News" and the things it stood for. People actually started to write in. More companies, foremost Telecom Software (then owners of the Firebird, Rainbird and Silverbird labels), were interested in giving "ST News" review status. "ST News" was beginning to be fun, too. Somewhere in autumn I began adding pieces of fiction (introductory novellas) to game reviews, providing me with an outlet for my urge to be creative.

The ST scene was improving drastically. Microdeal was releasing games for the ST, some of which contained music by my all-time favourite Commodore 64 music programmer, Rob Hubbard from Newcastle Upon Tyne. I was getting convinced now that the ST was there to stay. It would be a big success. It would beat the Amiga. I had made the right choice one year earlier.

My ST system itself improved, too. A friend of mine built in the extra half megabyte of RAM I so desperately needed, I got a colour monitor and TOS on ROM. Later that year I also laid hands on one of those excellent Kumana 3.5" + 5.25" double-sided disk drives. I was ready for this new era.

Somewhere in Germany, a long-haired computer freak took to bits some of Rob Hubbard's ST

sound routines. This guy, possibly known to you under his pseudonym of Mad Max of The Exceptions, eventually made the music for various small demos, accumulating into things the likes of the "B.I.G. Demo" and the "Union Demo". The ST was getting a demo scene, too, another thing I personally feel is a prerequisite for a computer platform if it is to be explored to the maximum of its abilities.

Stefan Posthuma, the guy who had contacted me originally because he had read about my hamster in "ST News" and who had written an article on creating your own adventures in the first Volume, was becoming an ever better friend. We saw each other regularly, he wrote more and more, and he also started reprogramming some of the slow bits in the "ST News" user interface using machine code instead of "GFA Basic". Slowly but certainly, the "ST News" shell got faster, better and more user-friendly. By the end of the year, the "ST News" interface was basically my skeleton with Ste-

is now called "Ultimate Virus Killer").

After 1987, which I think was the year of the "ST News" breakthrough, it entered a bit of a dip. As I was about to start a University study in Biology in August 1988, I started looking for someone to replace me as editor. I contacted Mark van den Boer but he told me he was spending the next year in South America. "ST News" issues were getting more hectic to finish, what with my postponing article writing until the very end every time. Even though quite a few people contributed it was still me who had to write most. A lot of time went into the continuing support and development of the "Virus Destruction Utility", a program that became commercial somewhere in spring with version 3.0.

After Volume 3 Issue 2, the first issue to contain a so-called "real-time article" of a visit of The Exceptions to our local computer group and a coding night resulting in the "Amiga Demo", I asked Stefan if perhaps he would care to take over. With him at the

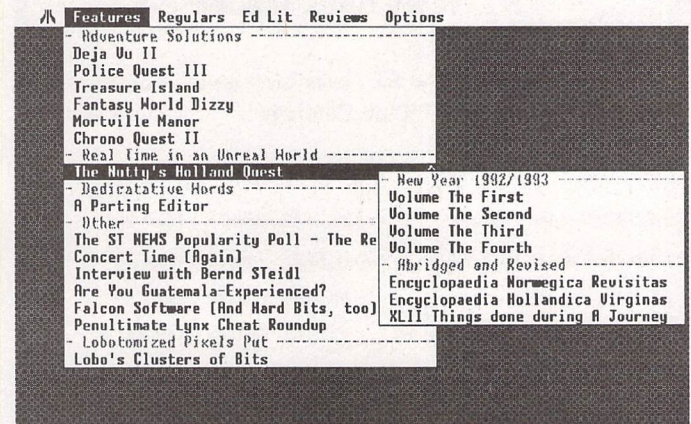
particularly soothing brand called Plantiac), consumption of huge amounts of beernuts, metal music at prohibitively loud volume, and playing "Bubble Bobble" and "Super Sprint" until early in the morning.

Up and Away

After the initial lack of inspiration, the rest of Volume 3 was made with more zeal and enthusiasm than ever. Demo coders The Exceptions did a series on advanced ST programming (border obliteration, raster interrupts and Mad Max's music programming) and the one and only Piper even wrote some stories and reviews for us. After the summer I entered student life, a period that is best only to look at in retrospect. Although I became a near-alcoholic and a mere month or two had contained all the girl encounters I should normally have had in the previous couple of years, "ST News" just got more vibrant and crazy in a harmless way. My social life as a student and the "ST News" side projects—sending Crazy Letters, Crazy Audio Tapes and Crazy Video Tapes to and fro some of our whacky friends abroad, most particularly in Norway – as well as the first success of my virus killer assured that my Biology studies quickly poured down the proverbial drain. Stefan, on his part, started writing the first colour and monochrome demo screens to be included in "ST News", something he would continue for about a year before he channelled his coding prowess into greater things and joined the Lost Boys to co-produce the "Mindbomb" demo. He still stayed on as editor and resident writer, luckily.

We stumbled headlong into Volume 4 almost unnoticed. I had in the meantime stopped with my studies and was trying to think of something to do. It is said sometimes that you're best at expressing yourself when things are looking bad. This might very well be true. The first half year of 1989 saw the release of three "ST News" issues of ever increasing quality, with Stefan each time bettering himself coding-wise and me just writing as if haunted by something or other. By my regular self, maybe?

Some well-known demo coders had set up a software company in Germany by the name of Thalion. I visited them, sent an open application, and prayed. After a week or so they told me I was welcome to start



fan's organs, and caused the UK glossy "ST World" to write about us and tell the world we were better than "F.A.S.T.E.R.", the most magnificent compliment achievable at the time. ("F.A.S.T.E.R." disk magazine, by the way, had ceased publication after the summer of that year.)

Problems

"ST News" ended 1987 with a whole host of enthusiastic foreign distributors and a highly active editorial staff. On the down side, that year also ended with the discovery of computer viruses on the ST. "ST News" Volume 2 Issue 8 offered a basic but effective aid against these little pests, one of the very first versions of the "Virus Destruction Utility" (which

helm, I reckoned I'd have more free time to spend studying. I would only have to write articles and he'd do the rest.

He agreed, and in May 1988 he took over. The "ST News" user interface was improved even more dramatically with a mouse-driven page-view mode almost as fast as "Tempus" but with text styles. People reacted positively to the take-over, which had a most inspiring effect on both Stefan and me. We finished the "ST News" issues together now, alternately at his place or mine, events which usually involved a lot of coding and cursing as well as an almost traditional purchase of some CDs at the local CD shop, insane amounts of 35% proof Dutch Brandy (most notably a

with them as of October 1st. I had a purpose in life now, and I set out organising something to reflect my state of being on "ST News" – the "LateST NEWS Quest". I called dozens of people all over England to arrange meticulously a kind of tour by bus and train across England (and Wales!).

Tour

In July I went on a "tour holiday" with Stefan, where we visited all the major software houses (Hewson, U.S. Gold, Virgin Mastertronic, Electronic Arts, Microprose, Ocean and others) and many programming legends. The result, "ST News" Volume 4 Issue 4 that was released on August 12th, contained over half a megabyte of "real-time" articles, as well as other articles concerning The Quest. Some of the people visited and interviewed in detail were Alex "Goldrunner II" Herbert, Jeff "Llamasoft" Minter, Steve "Goldrunner" Bak, John "Nebulus" Phillips, Tony "Cyberoid" Cooper, Peter "Arkanoid" Johnson, Anita "The Pawn" Sinclair, the Bullfrog Team, the Lost Boys and Jez "Starglider" San as well as sound programmers Ben Dalglish and David Whittaker and graphics artist Pete Lyon. During the three weeks that it took we had memorable experiences such as eating Chili with Jeff Minter in the pub around the corner, spending a few nights at the utterly hospitable Steve Bak's house, witnessing a stage play where Pete Johnson played guitar in the orchestra, and flying over Tetbury in Microprose's own sports plane.

The issue itself was crammed with four demos (two of them by John Phillips) as well as four musical pieces (one of which was a song done especially for us by David Whittaker). Many people today still think this was the best "ST News" issue ever released. Although the feeling of "what can't get better can only get worse" had already gone through me after the completion of Volume 2, its second occurrence after the finishing of this "LateST NEWS Quest" issue was far more persistent.

The End?

After the summer, Stefan started to get more involved in his day-time job—he was an application programmer at SPC—and I moved to Germany to write background novels and design games for Thalio full-time. There was no time left to actually get

together with Stefan in a weekend and finish an issue of "ST News", so that's why the next issue wasn't released until February 11th 1990, the day on which Nelson Mandela was released from prison. A large chunk of it was dedicated to a visit Stefan and I had paid to our Crazy Friends in Norway, where we had spent the freezing days around New Year's Eve. Especially after Volume 4 Issue 4, however, this new issue seemed a bit lacklustre. That's why we decided to call it quits and stop doing "ST News" altogether. On March 11th 1990 we released the two-disk "Final Compendium", a collection of what we felt to be the finest stuff we had ever offered in any of the "ST News" issues, over 100 articles in all.

To be honest, dying wasn't a lot of fun. The good thing was that we didn't have any obligations any more, but there was also a bad thing: What to do now? What could we do to get rid of excessive inspiration?

So even when our death had been official for a couple of weeks only, Stefan and I considered a possible revival. "ST News" had, after all, been lots of fun and neither of us had really felt happy about giving it all up. It was a choking feeling to no longer have the Purpose of finishing an issue of "ST News" in our lives. So we simply decided to arise from the grave as it were, and the Undead issues of "ST News" sprang to life.

The Dead Shall Rise

The 'undead' issues were started with a subtle change in layout and with more accent on non-computer related material, when Volume 5 Issue 2 was released on November 24th 1990.

I actually didn't like making this issue. The writing had been fun as usual, but the actual finishing lacked the old feeling. My job pretty nearly killed off "ST News", but I am glad it didn't happen.

When Volume 6 Issue 1 was released, on April 20th 1991, I had already quit working for Thalio—not actually because I wanted to continue with "ST News" and I was afraid it might suffer from my daytime job, but also because things at Thalio had changed rather too much for my liking and I wanted to pick up my University career again after the summer. I started to work for a Dutch computer magazine "Atari ST Nieuws" to bridge the gap between Thalio and University.

"ST News" Volume 6 Issue 1 was dedicated almost totally to the "ST News International Christmas Coding Conference", a gathering of more than 120 demo crew people joined together in the town of Oss in the Netherlands on the three days prior to Christmas 1990. All noteworthy people from the demo scene had been there, including the semi-legendary Exceptions, Overlanders, ST Connexion, the Carebears, the Lost Boys, Unlimited Matricks, the Delta Force and the Quartermass Experiment. It was a great experience. Convention T-shirts and even a professionally edited Convention Video were made.

On the "ST News" disk were the results of the "3.5KB VIC TIMES REVISITED DEMO COMPETITION" (a competition where crews had to conceive a demo that didn't take up more than 3.5 Kb of disk space, i.e. the amount of memory an old Commodore VIC-20 had, the machine on which Stefan had started years ago). The first prize for this competition was Jeff Minter's very own "VIC Internals" including authentic Yakly notes, whereas Jeff has also written a special 3.5Kb kind of "Gridrunner" game.

Around the "ST News" release date the allied forces had deemed it necessary to start the Gulf War, an event which didn't leave us unaffected and caused us to write some rather unusually serious stuff, too.

In the summer of that year "ST News" celebrated its first lustrum, properly celebrated in Volume 6 Issue 2 which also featured an extensive coverage of the "Delta Force International Coding Conference", held a few weeks earlier in the tiny village of Leutenbach, near Stuttgart in Germany.

Five years after its start, "ST News" was still very much alive and kicking. Only 2 or 3 issues appeared per year now, but they were at least 2 or 3 times as big as most of the older issues to begin

ST News Back Issues

You can get all of the ST News back issues from the FaST Club Catalogue.

- | | |
|-----------------------------|--------------------------|
| MGN.13: Volume 1 Issues 1-4 | MGN.42: Volume 4 Issue 2 |
| MGN.15: Volume 1 Issue 5 | MGN.43: Volume 4 Issue 3 |
| MGN.16: Volume 1 Issue 6 | MGN.44: Volume 4 Issue 4 |
| MGN.01: Volume 1 Compendium | MGN.51: Volume 5 Issue 1 |
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| MGN.33: Volume 3 Issue 3 | |
| MGN.34: Volume 3 Issue 4 | |
| MGN.35: Volume 3 Issue 5 | |
| MGN.36: Volume 3 Issue 6 | |
| MGN.37: Volume 3 Issue 7 | |
| MGN.03: Volume 3 Compendium | |
| MGN.41: Volume 4 Issue 1 | |

Prices:

Premier Range Disks: Disks with two letter prefixes cost £1.25 each (£1.00 to subscribers).

Standard Range Disks: Disks with three letter prefixes cost £2.75 each (£2.00 to subscribers).

with. I think it started to mature a bit now. Even though Stefan and I still got crazy at times, people now seemed to start taking "ST News" a bit more serious. A shame that it happened that late, really, for the ST itself was already in the autumn of its life.

Academia

I had in the meantime started a new academic career when, in September, I had started studying English at Utrecht University—an undertaking I'm about to enter the fourth year of after the summer. This assured improvements in the "ST News" language as well as plenty of free time and a lot of inspiration.

On January 11th 1992, "ST News" Volume 7 Issue 1 saw the light of day. Stefan had gathered some courage and enthusiasm to supply the bog-standard pull-down menu with the ability to cascade, i.e. to have submenus pop up from the sides of their 'parent' menu. This made the user interface more intuitive and got

rid of the need to have excessively long pull-down lists. Quite an improvement. The issue itself, incidentally, had reviews of "Lethal Xcess", "Revenge of the Mutant Camels", "Oh No! More Lemmings" and "Barbarian II" before any of the glossies. There was an ever growing emphasis on non-computer-related material, mostly novels of some kind of other.

Two further issues were released that year, featuring quite a lot of fiction. Three large issues, each becoming increasingly bigger (and all featuring more than a megabyte of articles!), was quite an achievement for one year at the time.

Volume 8 just continued much in the same fashion. Each issue was another chunky pack of reading with a multitude of PD and shareware programs to boot. More and more attention was given to books and music, too. Stefan's increasing involvement in the programming of CDi games for SPC Vision caused him to

hand back the editorial sceptre to me. With the heaviest part of my English studies behind me, I found an increasing amount of time available so that wasn't a problem at all.

Today

This year, with Volume 9, "ST News" has broadened its attention to a multi-media approach including films and more attention on books and music. Besides the usual amount of games and application reviews it now also contains more concert reviews, interviews with musicians and hot news items concerning books, films, and music. It has also gained true Falcon compatibility (including the music!) where it is no longer needed to run from an ST compatibility resolution. Of course regular ST and TT machines are also supported, and it is said even to work on the "GEMulator" with the music switched off.

"ST News" Volume 9 Issue 1 was released on March 11th 1994.

The next issue is due any day now (July) and will feature, among many other things, interviews with Jeff Minter, Napalm Death, Anne "Dragonriders of Pern" McCafrey, Dan "NeoDesk" Wilga and Stuart Coates, a totally revised and extended Disk Magazine Roundup, a Revised Cheat Code & Password Encyclopaedia, the usual plethora of adventure solutions, literary ramblings, reviews of "View II" and "Imagecopy 2", an ultra-complete Falcon compatibility list and some interesting programs ("Triple Yahoo" and "Revenge Doc Displayer").

Why not check out "ST News", the ST/TT/Falcon multi-media disk magazine? The FaST Club is the official UK distributor of "ST News" — see box on page 18.

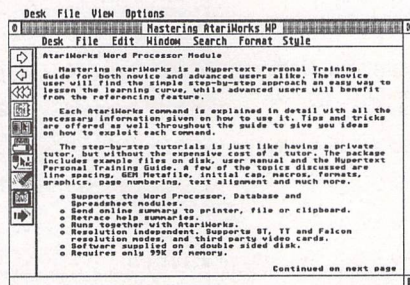
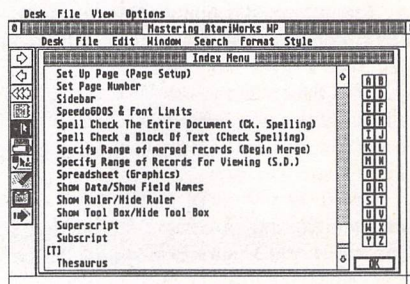
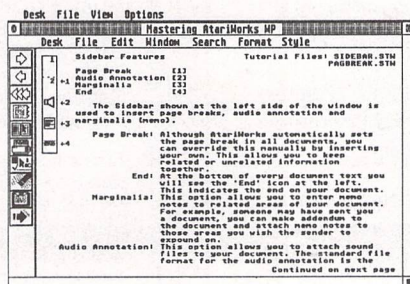
Mastering AtariWorks

The Hypertext Personal Guide for AtariWorks that offers quick referencing to all commands with concise screen summaries and tutorials, including tips and tricks.

Mastering AtariWorks is ideal for both novice and advanced users alike. Novice users will find the simple step-by-step approach an easy way to lessen the learning curve, while advanced users will benefit from the referencing feature.

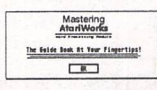
Each command is explained in detail with all of the necessary information given on how to use it correctly. Tips and tricks are offered throughout the guide to give you ideas on how to exploit each command to its fullest.

Just a few of the topics covered by Mastering AtariWorks are line spacing, GEM Metafiles, drop capitals, macros, page numbering, reporting, charting, calculations, and much more.



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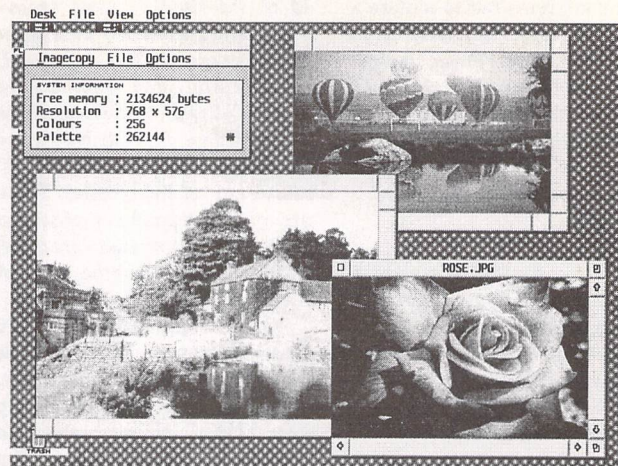
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Imagecopy 2

Image utility for Atari ST/TT/Falcon computers

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

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

Print images and screen dumps in black and white or colour on a wide range of printers, including 9-pin and 24-pin dot-matrix printers, Bubblejet printers, Deskjet, and Laserjet printers. Imagecopy 2 offers print-scaling, variable-sized halftones for realistic colour depth, and comprehensive colour controls, and is able to print images containing up to 16.7 million different colours (24-bit true-colour). Print-colour options include: monochrome, CMY colour, CMYK colour, CMY separation, and CMYK separation. Colour separation modes can be used to print full-colour images on a monochrome printer.

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

Can be used as a print program with paint programs like Degas, HyperPaint, True Paint and PixArt.

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

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DTP

David Smith takes a look this month at two books by Roger C. Parker, one specifically aimed at the Newsletter market, the other at a more general DTP readership.

Book Reviews

Newsletters From The Desktop

by Roger C. Parker

Roger Parker's "Looking Good in Print" was reviewed last month, and the present volume could be seen as a detailed extension of the newsletters section in Part 3 of that book. Certainly, much of the subject matter of the earlier tome is repeated herein—typography, layout, white space, etc., etc.—but given a different emphasis and approached from another angle, for whereas LGIP was concerned with the more general aspects of DTP design, covering all possible formats and vehicles, this one keeps to its specific remit of newsletter production and so deals with such subjects as parts of a pre-defined whole.

The concept of 'Design' is still a key feature here, naturally enough, and it lies at the heart of all the steps that the author takes you through in the production of a newsletter.

The book has 306 large format pages, an introduction, eleven chapters, three appendices, a glossary, a bibliography and a Resources guide. The first chapter, "What's Involved", looks at the 'anatomy' of a newsletter and lists everything needed to produce good-looking copy. Here Roger Parker explains the terms that will be used extensively in the forthcoming chapters—nameplate, folio, seals and logos, masthead, eyebrows, decks, pull-quotes, jumplines, etc. At the end of the chapter he outlines the way in

which the next seven chapters (2–8) form a step-by-step systematic process of designing a newsletter:

- Planning
- Grids
- Nameplate design
- Formatting body copy
- Adding reader cues
- Integrating visuals
- Adding detail with graphic accents

Chapter 2 looks at the four steps that should be followed when planning your newsletter—

1. defining goals and limitations
2. collecting ideas
3. preparing rough sketches
4. translating and refining

—and ends by mentioning the balance between unity and contrast that is essential to good design. Consistency is vital, but this will lead to an overall impression of 'greyness' if no effort is made to introduce some element of contrast in the architecture of each page.

In chapters 3–8 the author deals in turn with what he terms the six building blocks of newsletter design. These are introduced in the order required for actual production, and it is thus no surprise that he starts the building process by discussing the use of grids, the 'foundation of your newsletter's design' and 'the basic framework

upon which your newsletter is assembled'. He looks at the various uses to which different numbers of columns per page can be put and emphasises the additional importance of the correct amount of white space incorporated in the page layout. Whatever grid you eventually decide is best can be saved as a 'template' in the DTP software you use.

Chapter 4 moves on to the creation of a 'nameplate' and contains excellent advice on the choice of words for both title and subtitle, appropriate typefaces, placing, colour, bleeds and framing the title with rules. Parker also gives advice on the production options—drawing and font manipulation programs, paste-ups, image scanners and freelance graphic designers. The next chapter goes on to deal with the treatment of the 'smaller type'—the body copy. A detailed look at the right choice of typeface and spacing and the appropriate use of typestyles, hyphenation, etc., is followed by a section on setting up paragraph styles in your software for different kinds of blocks of text—bullets, subheads, quotes, etc. He looks at the various ways in which paragraphs may be formatted and reminds the reader of the importance of copyfitting. It ends with 'fine-tuning' the word spacing (to avoid rivers of white space) and a look at character substitution—M dashes for

hyphens, etc.

Body text en masse is both boring to look at and daunting to read. This can be remedied by creating 'reader cues' that serve the dual purpose of breaking up the monotony of masses of small-type text and helping the reader to see at a glance the main points contained in an article and thus its general 'drift' and direction. They are also useful when the reader wants to have a second look at one or two sections of the whole piece. Such cues include headlines, subheads, jumplines, eyebrows, subtitles, pull-quotes, initial caps, bullets and numbers in lists, and indeed the whole front page. Advice is given on typefaces, placing, typestyles and alignment, most of which can be saved as part of your template file or 'stylesheet'.

The emphasis so far has been on text, but with Chapter 7 we are led on to the incorporation of 'visuals'—photos, graphs, scanned images, logos, etc., and this is taken a step further in Chapter 8 with the addition of graphic accents—borders, separators and dividers, backgrounds and symbols. Thus, having now looked at all six building blocks in Chapters 3 to 8, we are ready to move on to 'pulling it all together', the title of Chapter 9. Tiresome considerations such as article size and editing (or expanding) the copy to fit the space available are dis-

cussed, and a list of typical pitfalls is given towards the end.

Chapter 10 "Translating Theory Into Practice" takes a close look at two sample newsletters, "Tips and Tricks" and "Kidscope". We are shown how each is drawn up in terms of the six building blocks of chapters 3-8, and how refinements have been added to the initial basic ideas. We are shown plenty of visual examples of the changes made so that the improvements can be taken in at a glance. This idea is carried over into Chapter 11 "The Newsletter Gallery" where the author uses his own ten favourite newsletters to demonstrate how the pursuit of his 'building blocks' technique can (and indeed does) lead to harmony, balance and interest. The choice of the ten newsletters is nicely varied and should give all readers lots of hints for their own particular projects.

The three appendices deal with the choices of hardware, software and high resolution output available to the reader. Unfortunately, the first of these (A) only considers the pros and cons of various Mac and PC systems but makes absolutely no reference to any other—Atari included (er, excluded!). This should not be a put-off for anyone reading this review, though, as the content of the book is not at all machine-specific. The ST, with its choice of DTP and graphics software, is well capable of producing the results outlined by the author and demonstrated in his examples. If you are only called upon to produce a four-page quarterly for the local darts team then the purchase of this volume might justifiably be regarded as a touch OTT, but for any of you who need to do more than that and who want ideas to liven up the presentation of their productions, I have no hesitation at all in recommending it. Excellent content, unfussy layout, easy legibility, plenty of reader cues (!), and a good development line running throughout: spot on!

Title:.....Newsletters from the Desktop
 Author:.....Roger C Parker
 Publisher:.....Ventana Press
 Price:.....£21.95
 Pages:.....306
 Dimensions:.....233 x 186 mm
 Year:.....1990
 Country:.....USA
 ISBN:.....0-940087-40-5

One Minute Designer

by Roger C. Parker

'Over two hundred before-and-after tips and ideas for better-looking, more effective ads, brochures, newsletters, and training materials.....'

.....says the front cover. Yes, two hundred-odd bits of advice (plus the obligatory appendices, glossary and resource lists) spread over 288 pages, arranged in single-page items and organised into eight main categories, namely:

1. Planning
2. Page layout
3. Display type
4. Body copy
5. Visuals
6. Graphic accents
7. Colour
8. Project-specific hints

As you can see from this list, much of the material used in Parker's other DTP books is repeated here, but again the stress given to it is different, determined not only by the wider aim of the book but also by its format. It is in any case evident that any publication on DTP Design is going to include such considerations as typefaces, layout, body copy, visuals, etc., etc., but the way in which these are introduced and presented will vary with the particular direction and emphasis of the book's remit. This book's title makes its object clear enough — brief hints and tips on many of the problems that beset the DTP user — but it is by no means a hotch-potch of unconnected ideas.

The author has in fact made every attempt to draw together similar elements, often showing, on opposite pages, the contrasting results that can be obtained by using two different ways of dealing with the same problem. For example, on pages 20-21 in the Page Layout section he displays the widely differing effects produced by symmetrical and asymmetrical page elements — the first

to give a more 'conservative' image and the second to project a 'dynamic' image. Sometimes he shows how a particular 'rule of thumb' can be used for effects which though by no means identical are in some way related — on pages 26-27 in "Display Type" he recommends first the use of larger display type in headings and subheads to grab the reader's attention and then the use of different type sizes on the same page "to create a hierarchy of importance".

The layout is good: each item, on its own page, has a brief written explanation in the upper half of the page and at least one visual example in the lower half. In addition, there are captions to the visuals in italic red in the outside column of the page. These serve to pinpoint the differences between the examples given and/or to elucidate the effect shown.

Chapter 8 gives advice on seven specific projects:

- Ads and flyers
- Books and documentation
- Brochures
- Business communications
- Newsletters
- Presentation visuals
- Résumés

This is typical of Parker's general approach. Theory is never allowed to swamp practicality — or, put another way, he always makes sure that there are enough genuine worked examples of the kind of milieu his reader might be involved with. And again, he uses the before-and-after system, showing how the look of a page or headline, graph or image, can be tweaked into something very different, much more interesting and

"If readers apply just a few of the ideas in this unique book ...in the end, desktop publishing—and millions of readers—will be the winners"

(Quote on cover from "Communicative Briefings")

pleasing, by the use of some small attention to detail.

I have one or two criticisms of this volume. Firstly, the body text in his examples is often the peculiar 'pseudo-Latin' so beloved of the writers of such material. Sheer gobbledygook, of course, and one understands the reasons why it is used, but why are the words occasionally so un-Latin? Where on earth does he get 'zzriil' from? And why are there words with a 'w' in them ('wisi', etc.)? Another sign of linguistic unawareness is seen on page 139, where, in a piece on the use of foreign accents, he uses the phrase 'mon chère', which is grammatical nonsense. In his other volumes Parker lays strict emphasis on the importance of proof-reading; surely he should pay even greater attention to this when using a language he doesn't speak himself (or at least doesn't speak very well)?

There is also the occasional error of layout — on page 38 he repeats the same visual example when it is obvious that two slightly different ones were intended, and the captions go similarly awry.

On the whole, though, it's a

very useful tome, eminently browsable. If you are new to the game, it would need to be used alongside another DTP guide that takes you through the complexities of Desktop Publishing step by step — either one of Marlow's or Parker's offerings reviewed in our last issue — but if you are just looking for some new ideas to play around with, a few tips to liven up your DTP productions, then this will fit the bill nicely. Another definite recommendation.

Title:.....One Minute
Designer
Author:.....Roger C. Parker
Publisher:.....QUE
Corporation
Price:.....£18.45
Pages:.....288 plus pullout
Dimensions:.....230 x 186 mm
Year:.....1993
Country:.....USA
ISBN:.....1-56529-216-2

All This....and More!

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Inventories
Hierarchy of ideas
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White space
Column spacing
Borders

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Impact of white space
Editing headlines
Upper case v. Lower case
Emphasis
Shading
Fine-tune letter spacing
Subheads/sideheads
Hanging indents
Pull-quotes

Section Four: Body copy

Templates
Appropriate x-height
Letter/word spacing
Output resolution
Emphasis
Line spacing/leading

Paragraph formats
Initial caps
Punctuation
Hyphenation/justification
Text wraps
Lists/bullets/numbers
Ligatures
Spell-checks

Section Five: Visuals

Size
Silhouettes
Borders
Captions
Charts/tables/graphs

Section Six: Graphic accents

Reverses and shades
Bleeds
Boxes and Rules

Section Seven: Colour

Concentrated colour
For unification
For emphasis
For 'coding'
Screening

Section Eight

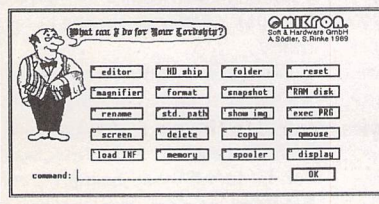
(See main review)



Mortimer

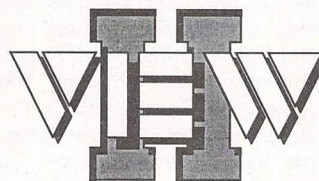
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- Disk Functions: New folder, Rename, Copy, Delete files, and Format disks.
- Magnifier: integrated screen magnifier.
- Snapshot: grabs all or part of the screen and stores it on disk as a picture file.
- Screen: built in screen saver and 50/60Hz frequency toggler.
- RAM disk: flexible RAM disk that expands to the size required.
- Programs: TOS programs can be run from within Mortimer.
- Calculator: convenient pocket calculator with lots of functions.
- Spooler: allows you to work with the computer while your printer is working.
- Mouse: dynamic mouse accelerator with lots of configuration options.
- Ascii: shows ASCII table of all characters.
- Memory: gives an overview of the current memory allocation.
- Display: displays time and date.
- Keyboard macros: you can assign any text(s), sentences and function keys to keys or key combinations. For instance, [Alternate]-[S] might produce "Dear Sir,".
- Virus guard: Mortimer will protect your disks from boot sector viruses, and will detect link viruses when they try and spread to your files.
- Mortimer is memory resident and available at all times from within all programs. When installed, Mortimer reserves just 64K of RAM - all Mortimer functions are linked to a sophisticated memory manager.
- Mortimer version 1 is compatible with all TOS versions up to 1.62. The MegaSTE, TT and Falcon version - Mortimer DeLuxe.
- Supplied with a very comprehensive 82-page printed manual.



Price: £14.95

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At last December's Atari Show at the Birmingham Motorcycle Museum (what a good combination of interests) I spent an interesting time with Neal O'Nions of Compo. He was demonstrating MUSiCOM 2 on a Falcon. I was so impressed that my mind was finally made up to become one of the Falcon Few. Having got all worked up, I was told that MUSiCOM 2 wasn't

actually ready yet and that I could have version one with a free upgrade to version two when it became available. My Christmas bundle included a Falcon with 64Mb hard drive, a couple of monitor adaptors, MUSiCOM, and a free upgrade to TOS 4.04.

After a long wait, MUSiCOM 2 has finally materialised. The wait is justified by the considerable enhancements made to the program, which has grown from just over 100Kb to well over 400Kb. The complete package still fits on one unprotected double sided disk and comes with an informative 37-page manual with plenty of pictures for those, like me, who find reading difficult when tackling new pieces of software.

For those of you who haven't come across the package, MUSiCOM 2 is a direct to hard disk recording program for the Falcon. The original MUSiCOM was a very simple recording program which provided simple record, playback, a few special effects and not much else. There was no editing facility or even the chance to view samples on screen. Had I not seen version two at the show, I would have been a little reluctant to part with my cash!

Whilst obviously created to do the same basic tasks of recording and playback, MUSiCOM 2 is in a quite different league. The user interface is very much in the German genre with most of the functions available from a colourful icon panel imaginatively called 'tools'. Once fully familiar with an icon interface, controlling the program is very easy. Right at the beginning, though, it can be a little baffling to work out what is

MUSiCOM 2

Reviewed by Graham Curtis



going on. I suppose one could always have a quick look through the excellent manual!

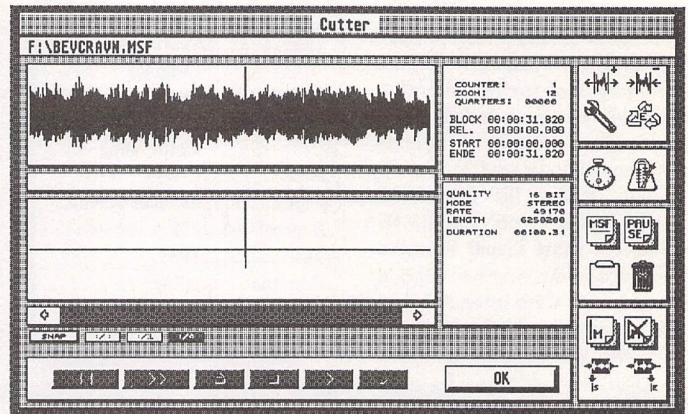
MUSiCOM 2 in use

The toolbox really is the centre-piece of the program, and soon becomes the natural way to drive MUSiCOM 2. The cutter is where most of the action is. This function provides a mimic of a simple stereo tape deck, with a few additions to keep us on our toes. Used in its basic form, cutter behaves like any normal tape machine. A row of icons along the bottom of the window act as the tape controls with familiar record, play and fast wind buttons. The eject and record icons bring up a file selector for loading and saving sample files. Each stereo channel has its own oscilloscope view which can be zoomed in and out for precision editing.

Block marking is done with the mouse and each end of the selection area can be fine tuned by clicking just outside the selection area. Blocks can be saved in the common .AVR format or in MUSiCOM 2's new .MSF file. Strangely, blocks cannot be inserted into an existing sample. Instead MUSiCOM 2 operates a play list system. Rather than have multiple copies of blocks cluttering your hard drive, you construct a file (interactively of course) which contains all the sections of your masterpiece. At playback time, MUSiCOM 2 knows where to find all the pieces and just strings them all together.

While most of your time will be spent with the cutter, MUSiCOM 2 allows you to have as many of the tools on screen as you wish.

The parameters window allows the setting up of the sampling rate and resolution of the A/D converters. Like its competitors, MUSiCOM 2 cannot sample at standard CD or DAT frequencies. Compo



The pretend tape player/editor

can, however, supply an external hardware device which is plugged into the Falcon DSP port to provide these professional frequencies. Price is not mentioned in the manual.

With the sampling parameters set, it is simply a matter of connecting a stereo sound source into the Falcon's MIC socket. Because the input levels vary depending on their source, the sensitivity of the MIC input can be adjusted using the level tool. Not only does this provide slider adjustment for input and output levels, it also gives an animated sound level display so that you can adjust the levels for your particular input signal. Green 'LED's will turn red if the input or output is overranging.

For real techie types, the Spectrum Analyser tool provides a real time display of the frequency content of your signal. This can be a very useful tool for judging which sample rate to use, as it is pointless sampling at frequencies way above the content of your source signal. It will also allow you to see the effect of graphic equalisation on your signal.

To help you keep track of disk

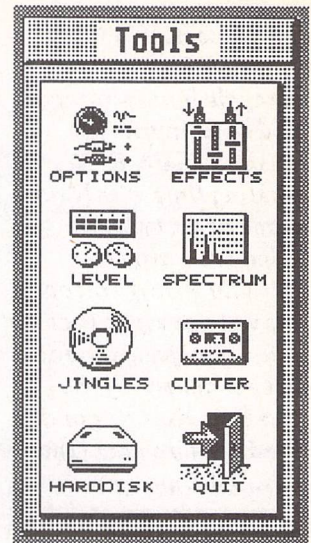
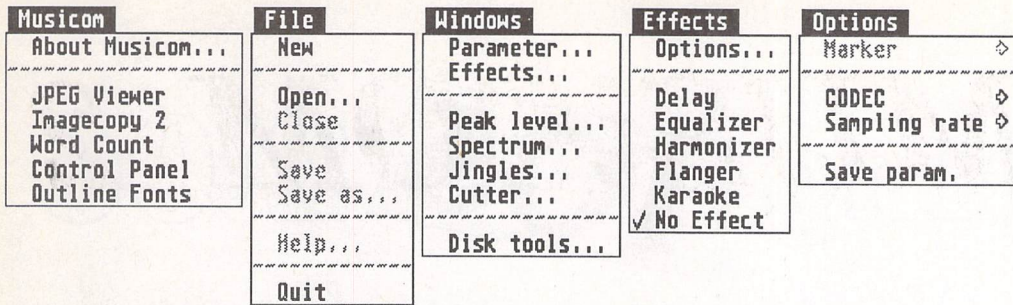
space, the disk tools provide statistics on disk space and estimated recording time at the current sampling rate. If you are strapped for space you can delete that Kylie track you've been hanging on to....

The 'jingles' tool allows you to select a folder and play all or individually selected samples in that folder.

The effects tool allows you to apply some effects either to your existing samples, or to signals as they are being recorded. Delay (echo) and Graphic equalisation are familiar to most of us, but the harmonise and flange effects can provide some rather interesting results.

Harmonise allows you to add a pair of signals to your original that are simply the original signal shifted in pitch. The result sounds like your original artist is accompanied by a pair of friends singing in harmony.

Flange is a rather weird effect. To me it sounds like hearing the sample through a drainpipe! As with all the effects, the final result can be tuned by adjusting the mix between original and processed signal.



Perhaps MUSiCOM 2's cleverest (not necessarily the most useful) effect is Karaoke. Like it or loathe it, it seems that some people cannot get enough of it. The process relies on those tracks where the vocals are recorded on both left and right channels equally. MUSiCOM can then subtract one channel from the other, and the voice component, common to each channel, is obliterated leaving just the instruments. With this done you can strut your stuff and lay down your own version of your all-time favourites. On a slightly more serious note, this feature might have a use if you have an original signal which is affected by some spurious noise on both channels. You might be able to clean up that scratchy old Bay City Rollers single!

Conclusion

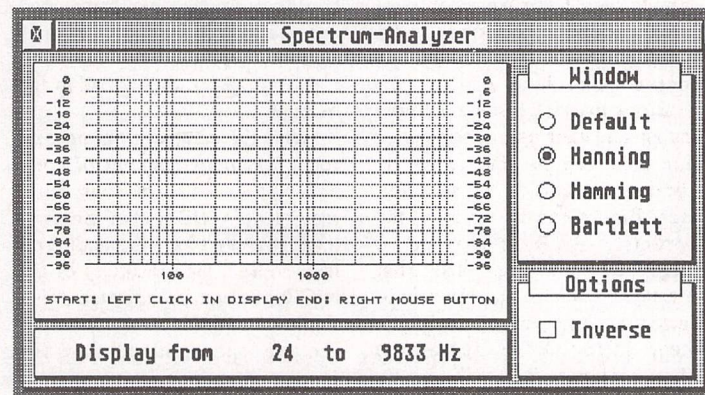
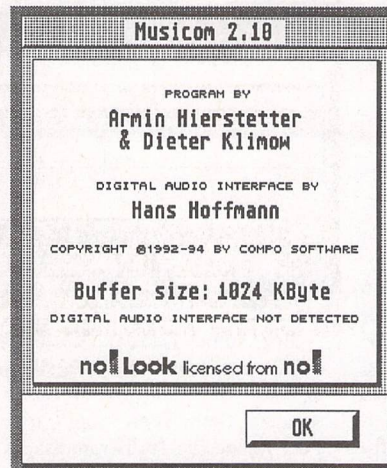
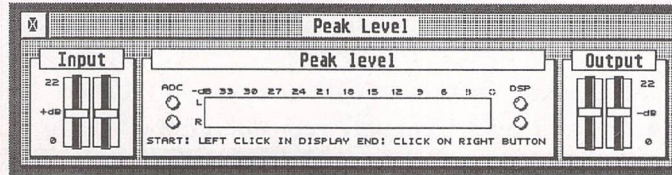
MUSiCOM 2 is not in the same league as Falcon Audio Plus, as reviewed by Piper in STA 43. It is however an extremely intuitive program which has now grown up into a useful audio tool for the enthusiast. If you haven't used sampling software before on your Falcon, you will spend the first few days in a state of amazement, marvelling at its audio capabilities. The user interface is extremely well polished and the package is completely stable on my Falcon. The editing facilities of the 'cutter' tool are very welcome, but the range of effects is little changed from version one. When you have children to amuse, a sample reverse facility is a must. Combined with pitch changes this can keep them amused all day! They will just have to make do with karaoke, I suppose.

For:

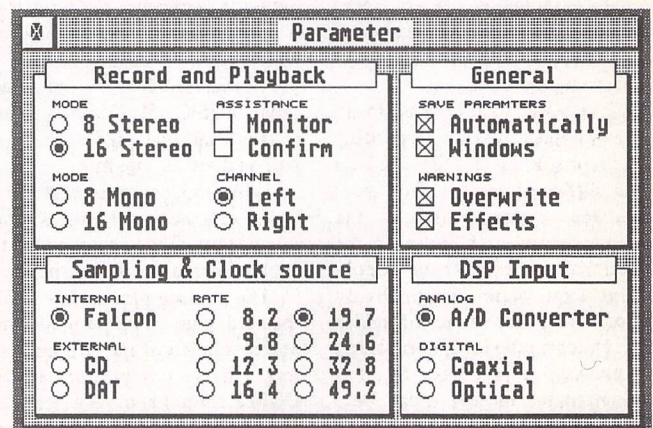
- ✓ Lovely user interface
- ✓ Good but brief manual

Against:

- ✗ Menu and Icon interface not totally interchangeable
- ✗ New MSF file format requires conversion utility



Product:.....MUSiCOM 2
 Supplier:.....COMPO Software Ltd
 Unit 3
 Green Farm
 Abbots Ripton
 Huntingdon PE17 2PF
 Tel:.....04873 582
 Fax:.....04873 581
 Price:.....£79 - Upgrades
 available from
 Musicom 1
 Manifest:.....one d/s disk; 37-page
 manual



Patching **TOS** 2.06

The most important software for all computer users is the built-in operating system. Any possibility of improvement, even small details, should be considered if you want to get the best out of an ST. Thanks to the work of highly experienced German ST programmers (Markus Fritze et al.) some routines of TOS 2.06 can be improved by patching a few bytes in the code. This is described in detail in the following article by Paul Dion from "Dejlige, dejlige København"...

The second patch in the list is in my opinion the most important. It fixes some weaknesses in boot execution and reset. This patch has to be done in the Eproms. Other patches are equivalent to what can be done with existing AUTO utilities.

Patching directly in the EPROMs is especially advantageous for floppy-only users who wish to save disk space and reduce boot time. The problem is that it requires special hardware to erase and rewrite Eproms. See the Silicon Systems ad. in ST Applications no.'s 39, 40, 41. The German eprommer I have from MAXON is not cheaper than Silicon's. I bought it five years ago. With it, I have been able to try all possible TOS versions. From 1992, I have been using TOS 2.06 on an STE and later on an STFM too.

My own experience of installing a TOS2 card in the STFM is quite good. Soldering was not that difficult (see the article in ST Applications issue 31). However, I did meet with two unexpected problems. In my STFM the MMU (with a ram upgrade on top) and the 68000 (with the TOS card on top) are about 5 millimeters too close to each other. I had to make the 68000 socket higher by using two sockets above each other. It works OK, but my STFM looks like a burger held together with long

screws. Also, installing TOS 2.06 in the STFM revealed a weak DMA chip. It was an IMP 100110. IMP's are specially known to give problems. Fortunately it was socketed, so it was easy to replace it. The faulty situation appeared as read-write errors on every file larger than 40K. Maybe I could have solved the problem by giving the IMP DMA some more power supply instead of replacing it. When switching to TOS 1.4 things were apparently faultless.

Back to the subject

The list of patches below includes only the patches that I have used over a long time without problems. Some patches refer to articles in the German ST-Computer magazine no.'s 1.90 and 10.90.

In the original German patch package (a folder called TOS-PATC2) there are various other things that I am not quite sure about. There is also a utility for loading TOS in RAM, but I could only get bombs out of it.

The first thing to do for newcomers is to have a look at their own TOS in an editor. Check the version date and see if it should be already patched. Mortimer may be used for this. To read the ROM, use Control-L in the RAM monitor. Then, enter adress \$E00000/ length \$40000

(\$FC0000/ length \$30000 with old TOS).

For some reason, Mortimer cannot save directly from ROM to disk. Save to the Mortimer ramdisk first. Then copy your TOS image file from ramdisk to floppy or hard disk.

The version date is easy to see in the HEX code at pos.24-27: for example \$11 14 19 91. The version no. itself is also visible in the HEXcode at pos.2-3. For example \$02 06, \$01 04, \$01 06, or \$01 62.

Patch List

The first number given in each of the following patches is the address (decimal starting from pos. 0) in a German TOS 2.06 with version date 14.11.91. If you have another version, the patch addresses may be a little different. For instance in the Swedish TOS the fonts are +30 offset. Some tip is given for each patch in order to make it possible to find the right addresses in any TOS version.

171 (followed by \$820A43)
Patch: Change \$02 to \$00
Result: default screen frequency changed from 50 to 60Hz.

450 (preceded by \$ 0008307C)
Change \$04 to \$01

(see next patch at 514)

514 (preceded by \$BD1305A8)
length= 11 bytes
Change to
\$42,B8,04,F6,3E,7C,3D,E8,42,38,
0A,02
Result: more stable reset.

TOS2.06 is known for some reset weakness. Some users have problems with reset-proof ramdisks. Other users experience occasional boot crashes (2 bombs while loading auto-programs or accessories). Not quite comfortable, although you usually get a normal boot with just a new reset. It might be possible to avoid that bomb risk in another way: set fastload OFF on the first active auto utility and the first accessory (\$00 or 06 in pos.25). Fastload means only about 0.2 second shorter boot time per MB ram.

To be 200% sure to get a clean boot each time, I use both the patch and fastload OFF on all my AUTO programs and ACCs. This keeps boot bombs completely away. I have no problems with my reset-proof ramdisk either (Mortimer).

Resetting is supposed to rescue you from bad situations. It should never be risky in itself.

2032 (preceded by
\$5C4F0CB90000)
Change \$3E80 to \$0000
Result: the ROM CRC check is bypassed.

At the end of TOS 2.06, there are 4 bytes which are a checksum of the whole file. A patched TOS is 'punished' with two CRC error messages at each boot up. Bypassing this check makes a quicker boot and avoids those superfluous CRC error messages.

2282 (preceded by \$ 12 D8 6A F4)
length=1
Change \$10 to \$30
Fixes some 'Boot device error'

2430, BOOT DELAY
Preceded by \$4E752E3C0000
Change \$3E80 to \$0000 or other value.

A given delay for hard disk booting is to be calculated as seconds x 200. The Atari value \$3E80 is 80 seconds. (Long enough to make some tea?)

With 00, the RAM test is bypassed. No boot delay. Boot is as with TOS 1.4 or older. No need to press a key to continue.

NB: on my STFM with TOS 2.06 installed on an AT-Bus TOScard there is still about nine seconds boot delay. (This is hardware coded?)

4750
length=15
Change
\$5C,4F,4A,40,66,6A,3F,3C,00,07,2F,39,00,00,0A

to
\$DE,FC,00,0C,4A,40,66,68,3F,3C,00,07,2F,38,0A
Result: better stack pointer operation when executing auto folder.

5224 (preceded by \$47F900E0)
length=2
Change \$1BC4 to \$1CA8

This patch is only necessary if you have an internal MEGA-clock. It will be protected from unwanted system time changes. Its setting can only be changed with MEGASET.PRG.

8262 (followed by 6DEA7000)
Change \$1770 to \$03E8
Result: when pressing Alt-Help: 5 sec. printer time-out instead of 30 sec.

21079 (preceded by \$526EFFFE0C6E00)
length=1
Change \$02 to \$01
Result: number of floppy drives changed.

When booting, TOS waits up to 3 seconds for drive B to get ready.

This is a waste of time if you never use a drive B. Avoid it by using this patch. You are still able to use a drive B by running B_ATTACH.PRG or by changing pos.1191 in RAM with a RAM editor such as Mortimer or TINYTOOL.ACC.

40912 (preceded by \$38804E5E4E75)
length=146. This is a VDI routine.

The patch I have tried gives a dramatic screen accelerator effect. But it makes nasty distortions with some GEM programs. Therefore I just name it, hoping that some clever programmer will make a better VDI patch some day.

49294 (and 2 other places).

This is not a patch, just some free space to write your guru's name. Search for 'love' and 'LOVE'. All TOS versions I have seen have the same graffiti embedded in the code.

96794 (preceded by FFCA206EFFCA)
Change to \$08 28 00 01 00 1F 67 2E

Prevents double scrolling in window scroll bars (same as ARROWFIX.PRG). This patch also involves patching at two other places:

At 96899 (preceded by 6EFFCA317C00), change one byte to \$00

And at 141460 (preceded by \$7E84508F4E75) length 22 change to
\$2C,08,49,F9,00,00,71,88,DC,94,4E,B9,00,E1,7F,44,BC,94,64,F6,4E,75

206254 (preceded by \$CCB200E15D2A)
length 1032

This is the big Fuji logo displayed on screen at boot. Pure bitmap, 96x86 pixels. With a paint program (PPM2) I have made a more informative picture containing the text 'Emergency: hold Control to skip boot'.

The following patches may also be used in older versions of TOS

Keyboard layout (standard 384 bytes KBD file)
easy to find: search after 'qwerty' and move 16 bytes back.
(pos.207798 in my 2.06)

Graphic Printer commands.
The original screen dump is only for 9pins printers.

With an NEC or other Epson compatible 24-pin or Inkjet printer, replace:
\$1B4C,1B59,1B3301,1B3301 with
\$1B4C,1B4C,1B3318,1B3300

Result: correct screen dumps on Epson printers when pressing alt.help. Scale: 60x60 or 80x60 dpi depending on the control panel setting (960 or 1280). It is not possible to patch better graphic commands like 1B 2A 26. The graphic commands are located at pos.208275 in the German 2.06. In other versions, search for \$1B4CFF.

FILLS

There are 3 groups. Normally, only the last one has editing interest. To find the first group, including 16 fills @ 16 bytes, search \$FFFF80808080. The third group including 6 fills @ 32 bytes is 422 bytes from there.

ICONS

The dialog texts are seen in two areas: TOS dialogs and GEM dialogs. The 3 alert icons (!,?,Stop) are located at 225916 (3x128 bytes) just after the last TOS dialog text.

GEM dialog texts follows about 3000 bytes further. The

HEX DEC	Original	Replacement
0 0	0	0
1 16	0 1 2 3 4 5 6 7 8 9 a b c d e f	0 1 2 3 4 5 6 7 8 9 a b c d e f
2 32	! " # \$ % & ' () * + , - . /	! " # \$ % & ' () * + , - . /
3 48	0 1 2 3 4 5 6 7 8 9 : ; < = > ?	0 1 2 3 4 5 6 7 8 9 : ; < = > ?
4 64	A B C D E F G H I J K L M N O	A B C D E F G H I J K L M N O
5 80	P Q R S T U V W X Y Z [\] ^ _	P Q R S T U V W X Y Z [\] ^ _
6 96	a b c d e f g h i j k l m n o	a b c d e f g h i j k l m n o
7 112	p q r s t u v w x y z { } ~ Δ	p q r s t u v w x y z { } ~ Δ
8 128	Ç Ü É Â Ã Ä Å Ç È É Ê Ë Ì Í Î Ï	Ç Ü É Â Ã Ä Å Ç È É Ê Ë Ì Í Î Ï
9 144	É Ê Ë Ô Ö Ò Ù Û Ü Ö Ù Ç £ ¥ ß f	É Ê Ë Ô Ö Ò Ù Û Ü Ö Ù Ç £ ¥ ß f
A 160	á í ó ú ñ ñ ñ ñ ñ ñ ñ ñ ñ ñ ñ ñ	á í ó ú ñ ñ ñ ñ ñ ñ ñ ñ ñ ñ ñ ñ
B 176	ä ö ø ø ø ø ø ø ø ø ø ø ø ø ø ø ø ø	ä ö ø ø ø ø ø ø ø ø ø ø ø ø ø ø ø ø
C 192	ü ü ü ü ü ü ü ü ü ü ü ü ü ü ü ü	ü ü ü ü ü ü ü ü ü ü ü ü ü ü ü ü
D 208	þ þ þ þ þ þ þ þ þ þ þ þ þ þ þ þ	þ þ þ þ þ þ þ þ þ þ þ þ þ þ þ þ
E 224	ø ø ø ø ø ø ø ø ø ø ø ø ø ø ø ø	ø ø ø ø ø ø ø ø ø ø ø ø ø ø ø ø
F 240	Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë	Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë Ë

NEW SCREEN FONT

Each changed character is shown on top of the original.
Æ, Ø and Å are for use in Denmark.

desktop icons begin two positions after the last GEM dialog text. The first 128 bytes are the rainbow icon from the copyright box. The next 256 bytes seem to be some unused icon. The next 256 bytes are Icon no.0 (drive) starting at 237550 in the German TOS. There are 12 icons in TOS 2.06, each consisting of a 128-byte mask followed by a 128-byte positive icon.

Tip: One can make an invisible icon by zeroing all 256 bytes. This makes it possible to write small 12-character messages on the desktop. I used to have a list of function keys on my desktop made up of a line of eight invisible printer icons.

Default desktop

From TOS 1.04, the default desktop is right at the end of the TOS. It is possible to make changes to the default desktop in order to make it similar to your favourite NEWDESK.INF, but in spite of there being plenty of space you must not make it longer than the original code (about 700 bytes). Be very careful not to make anything that GEM is not used to. GEM will just refuse to boot if there is a fault in the default desktop.

The number of #W lines can be reduced from 8 to 1 to make room for other things. You will still be able to open 7 windows, but they are going to be minimum sized. Don't try to shorten the #d line. It must contain 45 spaces. There is no #K line in the default NEWDESK.

The default key commands are to be edited at another place (221866 in the German version, about 1300 bytes before the beginning of TOS dialogs). Just write the key letters directly. For example: OSHDMBCWAXF NTKEU JZYV IRGPL

The size of TOS2.06 is about 248K. In the 8K free space at the end of the ROM your own editing comments can be written, for instance your own list of patches. If I was a programmer, I would use this precious 8K of ROM to store code for use in some resident utility.

The three system fonts

It is easiest to take the fonts without header (1152, 2048, 4096 bytes respectively). Font names '6x6 system font' '8x8 system font' are written in the TOS as part of a 602 byte long GDOS header. But do not touch

that header.

An easy way to find the fonts is to search after those font names. The first bitmap byte of the font is exactly 37 lines under e in 'system' (one line being 16 bytes). With the 8x16 font it is different. The text '8x16 system font' is oddly located 4 bytes AFTER the 8x16 font. The beginning of the 8x16 font is just 2048 bytes after the beginning of the 8x8 font.

Font editing tips

Edit a \$04 in the last byte to mark the end of font. If you put \$20 instead of \$00 in the 3104th byte of the 8x16 font, you get a slightly visible space character. A good thing for nosey users who wish to know exactly what their software is doing on screen.

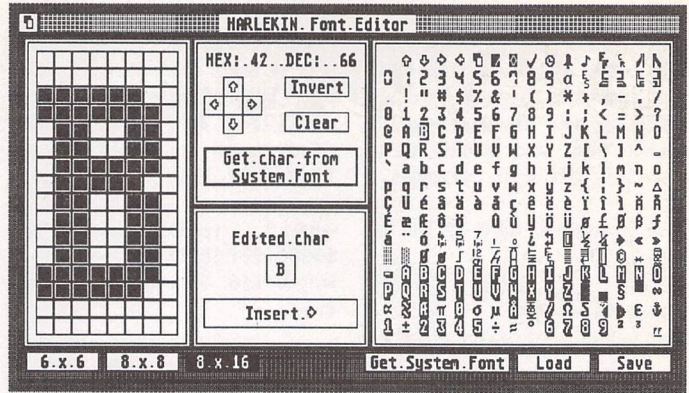
When editing in PRG/RSC/INF files, it is also useful to have a visible \$00. This is achieved for instance by putting a left parenthesis \$28 in the first byte of the font and at 4 other places at exactly 768 bytes intervals. The bitmap pattern made by a given byte is its binary value. \$28 is 00101000.

To illustrate how data is organised in the font, imagine the 256 character pictures placed side by side on one long line. This makes 256x8x16 pixels, which in turn is 4096 bytes (2048 in colour). Any byte may have any value. The 16 bytes belonging to one character are at 256 bytes' distance from each other.

Personally, I like the standard Atari font because of its excellent readability (better than the Mac font). But I have made small modifications to some characters, for instance making B and 8, or D and 0, more different from each other.

The Hebrew characters in my font are replaced by enhanced A-Z. Other characters are redesigned in order to use them as printer controls which are translated into escape sequences in my printer driver. Then I can do word processing with an ASCII editor. I like simple logic.

Most font editors are complicated, being concerned with GDOS and printer fonts. The only simple editor for standard system fonts I know is Harlekin's. In Harlekin version 1, the font editor is a separate program named CONFIG.PRG/RSC. It makes fonts without headers ready to patch in TOS. Fontkit 3.11 can be used instead if you know that it requires font names



beginning with A1, and that you have to remove the font name at the end of the fonts.

BIOS Parameter Block

The floppy disk formatting parameters are located just before '6x6 system font'. They are used by most formatting programs, not only TOS itself. The parameters appear in the TOS code in the same way as in any boot-sector (pos.11-27).

In TOS 2.06 there are 6 sets of parameters (6x19 bytes). The third one is for single-sided DD floppies. The 4th is for double-sided DD. The fifth is for 1.44MB floppies. In my TOS, only the directory length for 1.44MBs is changed from ? to p in order to make it equal to the directory length of DD floppies. 112 entries (p) is more than enough.

I have also tried to change the number of FAT sectors from 5 to 3 but I went back to 5 for compatibility reasons. I have experienced that TOS 2.06 (like older ones) can be fooled under some circumstances when you swap floppies formatted in different ways. If you want to live in peace with your TOS, it is recommended to make sure that all floppies have the same FAT and root directory lengths. Desktop or file selector windows full of garbage is an example of what can happen. It should not be possible when using unique serial numbers, but how do you check that?

General Remarks

I do all my editing in the Mortimer Deluxe editor. It has the drawback that unusual characters have to be entered by their decimal value, but it has the big advantage to be able to load two

copies of TOS for easy comparison with the original code when you are in doubt about what you have done. Also, you can make keypress macros to make patching quick and safe. For instance a macro moving 16 lines up/down for navigating through icons, fonts etc.

The big problem when editing TOS 2.06 is that (as far as I know) there is no other way to test than the lengthy process of blowing the eeproms and fitting them in the computer.

There are some old versions of TOS which can be booted from disk and tested before blowing, e.g. the BETA TOS 1.4 from 1988 and the KAOS TOS 1.4 from 1991. If you have one of those, use them to get some practice in patching fonts, keyboard, default desktop and other easy-to-find things.

Accessing the eeproms is easier in the STE than in the ST. They are in two 32-pin sockets underneath the floppy drive. New STEs used to have two 28-pin original ROMs in the 32-pin sockets. A little easy soldering is then needed if you want to replace them with standard 32-pin eeproms: the 2 resistors W102 and W104 have to be turned from 2-3 to 2-1. Unfortunately, some STE's have surface mounted eeproms. Make sure you have socketed ROMs before thinking about TOS editing.

That is about all I have to say about TOS 2.06. Now I hope to read about new patches from other people some day. There are still a couple of things that I can't find in the code:

For instance, changing the default steprate from 6ms to 3ms. And preventing TOS 2.06 from saving NEWDESK.INF without notice when an installed file is moved or temporarily renamed.

Beyond GFA

Mark Butler

Part Four: Wild Card, Case Not Dependent and Whole Array Machine Code String Search Routines

The story so far: In Beyond GFA parts 1 and 2 I introduced you to combining GFA BASIC and GFA Assembler into a powerful development tool. We also covered quite a bit of theory including most of the 68000 Address modes that are so essential to Assembler programming. Then in part 3 we produced our own version of INSTR that worked just a little better than the in built version. Now in part 4 we're going to expand on that and add Wild card Searches, Case Not Dependent and even Whole Array searches.

I hope that all those users who have never attempted Assembler are still with me. If you aren't then don't be embarrassed to drop me a line and I'll be happy to go over what is causing you such problems. All those who up to now skipped over these articles having 'known it all already' may consider giving it a try this month as we move on to enhancing our INSTR command to create a new Super INSTR.

If searching strings isn't exactly interesting to you then the methods employed by the routines may be. Feel free to modify them for your own use. A small mention would be appreciated somewhere in a READ_ME file should you use them in your own distributed programs.

Wild Card Searching

Before we examine how we have implemented these new features it may be an idea to actually explain what they allow us to do. Users familiar with the operation of the GEM file selector may already have met the standard '?' and '*' wild card characters. Our own wild card search operates in a similar way to the '?' character. This character placed in the search\$ will allow the acceptance of any character in its position.

If we have a main\$="mark marc muck" then a search\$ of "mark" would only find "mark" in the main\$. A search\$ of "mar?" would accept any character at the '?' position and would thus find "mark" and "marc". And finally a search\$ of "m??k" would accept any character at both '?' characters finding "mark" and "muck".

To give our routine more flexibility the wild card character is user definable, just in case we need to use '?' in our data.

Case Not Dependent Searching

The case of a letter, i.e. 'A' or 'a', can completely throw a search routine. Most programs with a search function give us the option to ignore the case. Now you will be able to offer this option as well. If we have a main\$ of "mark Mark and MARK" then a search\$ of "mark" will only find "mark". But with Case Not Dependent it will also find "Mark" and "MARK". If anything this is far more useful than the wild card search.

Without further ado, here is the code. Note that we have removed a few spaces to allow the code to fit into one column. When you type the code in just leave a single space between labels instructions and comments and the assembler will tidy it up for you, so don't bother counting spaces!

INSTR + Wild Card + Case Not Dependent Assembler Code

```
; INSTR Plus Wild card Plus Case Not Dependent Search
; Note Registers used, a0,a1,a2,d0,d1,d2,d3,d4 - Reminder
; Store values of used regs for op system, d0 used by us.
movem.l d1-d4/a0-a2,-(sp)
; Get values from Stack and work out VARPTR and LEN values
; Note have moved stack down 7*4 bytes to accommodate movem.l
movea.l 32(sp),a2 ; Get ARRPTTR main$
movea.l (a2),a0 ; Get VARPTR main$
clr.l d0 ; Clear out long word
move.w 4(a2),d0 ; Get LEN main$
movea.l 36(sp),a2 ; Get ARRPTTR search$
movea.l (a2),a1 ; Get VARPTR search$
clr.l d1 ; d1 cleared as well
move.w 4(a2),d1 ; Get LEN search$
move.l 40(sp),d2 ; Get Search Start Position
move.l 44(sp),d4 ; Wild card Char+CND Bit
;Set up store pointer with special lea relative command
lea data(pc),a2 ; Note reused a2
move.l a0,(a2) ; Store VARPTR main$
; Now check valid input, Return 0 if not.
cmpl.w #0,d2 ; Set to zero ?
beq d2_is_zero ; Yes, So skip next sum
subl.w #1,d2 ; d2=d2-1 or DEC d2
d2_is_zero:
adda.l d2,a0 ; Inc main$ start address
sub.w d2,d0 ; Dec length of main$
; Check search$ not bigger than main$
cmp.w d1,d0 ; D0 smaller than d1 ?
;cmp does sum d0-d1 and sets various flags, These flags are
;then used in a Branch, There are many Branch possibilities.
bmi failed ; Branch if minus, d0<d1
sub.w d1,d0 ; subtract length of search$
addi.w #2,d0 ; Put 2 back
;store values in store, Register values can now be changed
move.l a0,4(a2) ; Posn of main$
move.w d0,8(a2) ; Length main$
move.l a1,10(a2) ; Posn search$
move.w d1,14(a2) ; Length search$
pre_char_l: ; Jump back point
move.b (a1)+,d2 ; Get 1st Search char
cmp.b d4,d2 ; Wild card ?
beq char_l ; Yes - Skip Case Test
btst #8,d4 ; Case Not Dependent ?
beq char_l ; No - Case Is Dependent
bclr #5,d2 ; Set to Upper Case
char_l: ; Find first character loop
subl.w #1,d0 ; Reduce main$ length
beq failed ; Zero, Failed
move.b (a0)+,d3 ; Get main$ char
btst #8,d4 ; Case Not Dependent ?
beq cd_l ; No, Case Is Dependent
bclr #5,d3 ; Set to Upper Case
cd_l:
cmp.b d3,d2 ; Compare chars
beq match_l ; Found match, Look for rest
cmp.b d2,d4 ; Search$ 1st char=Wild card?
bne char_l ; No so keep looking
; Yes is Wild Card, Drop down to match_l
match_l:
;Got here match found, Look for match rest of search$
;Remember where we are in main$ first
move.l a0,4(a2) ; Remember Position
move.w d0,8(a2) ; Remember Characters left
rest_chars: ; Search rest of characters loop
subl.w #1,d1 ; Decrease length of search$
beq success ; Found it !
move.b (a1)+,d2 ; Get next search$ char
move.b (a0)+,d3 ; Get next main$ char
cmp.b d4,d2 ; Wild Card ?
beq rest_chars ; Yes so skip check
btst #8,d4 ; Case Not Dependent ?
beq cd_2 ; No - Case Is Dependent
bclr #5,d2 ; Make Upper Case
bclr #5,d3 ; Also Make Upper Case
cd_2:
cmp.b d2,d3 ; compare chars
beq rest_chars ; OK so far
; Got here - Failed, Set up and go back to char_l: search
movea.l 4(a2),a0 ; Restore last posn in main$
move.w 8(a2),d0 ; Restore length of main$
movea.l 10(a2),a1 ; Position of search$
move.w 14(a2),d1 ; Length of search$
bra pre_char_l ; Go back, look for 1st char
failed: ; Failed Return
clr.l d0 ; Set d0 to 0 failed value
movem.l (sp)+,d1-d4/a0-a2 ; Restore system regs
rts ; Return to BASIC
success:
; Got here, Found match
; Work our relative search posn found
movea.l 4(a2),a0 ; Restore found position
suba.l (a2),a0 ; Subtract Start of Main$
move.l a0,d0 ; Copy over to return Reg
movem.l (sp)+,d1-d4/a0-a2 ; Restore system regs
rts ; Return to BASIC
data: .DC.l 4 ; Data store 4 long words.
```

This is very similar to the routine that we studied last month. I don't propose to go over the common bits again—you will have to dig out your previous copy for that.

The beginning of the program is largely unchanged. We have used another Register (d4) for our new routines and have had to modify the movea.l command to save this extra Register to the stack. As saving this register has moved the stack 4 bytes further down the memory we have also had to look for our first value not at 28(sp) but at 32(sp). Finally the Wild card and Case Dependent value are moved with an extra move.l command to Register d4.

The GFA BASIC Call command will also have to pass this extra information. This is done simply by adding an extra value to the call we used last month.

```
C:a_instr%(L:ARRPTR(main$),L:ARRPTR(search$),L:x%,L:w%)
```

where w% is the Wild card and Case Dependent value. But hang on! How can we use one value to do two jobs? The answer is in the number of bits being passed to the routine. w% is passed as a long word, that's 32 bits. The user definable Wild card character needs only 8 of these bits leaving us 24 to play with. The first of these spare bits, bit 8 (bits are numbered 0 to 31) is used to signify a Case Not Dependent search. To set bit 8 we have to add 256 to the wild card character value.

For example, setting w% to 63 would define our wild card character as CHR\$(63) which is '?'. Any '?' characters in our search\$ would then be taken to mean a Wild card character. Adding 256 to this value in the following manner: L:63+256 will set bit 8 that will be taken to mean that the search is Case Not Dependent. Not adding 256 will mean that the search is to be Case Dependent. That still leaves us 23 bits for future options.

The program remains unchanged until we reach the pre_char_1: label. An extra 5 lines have been added to process the 1st search\$ character value that has just been moved into d2. First we look to see if the character is equal to the wild card character stored in d4. By restricting the comparison to the first 8 bits (bits 0 to 7) of d4 and d2 by using cmp.b we ignore any bits further up such as bit 8 of d4 that is used for the Case Dependent value. This initial check is purely to prevent a possible Case Not Dependent condition from modifying our wild card character.

If this character isn't a Wild card we then proceed to check if the search is Case Dependent by looking at bit 8 of d4. btst #8,d4 looks at bit 8 and if it is not set concludes that the Case Is Dependent and skips over the next instruction to the char_1: label.

That beq (Branch If Equal) branches to char_1: if the bit is NOT set is one of those situations guaranteed to blow every logic circuit in your brain. btst or Bit Test looks at the bit specified in the Register and sets the zero flag to the same value. So a bit found sets zero flag to 1. All straightforward so far. Now we have to access the value in that zero flag to make a decision based on its value. This is done using beq (Branch if Equal) and bne (Branch if Not Equal). Unfortunately beq works if the zero bit is set to 0, and bne if it is 1. Only if Case is Not Dependent do we want to modify the character stored in d2, so we look for the bit with btst copying it to the zero flag. We need to branch if bit 8 in d4 isn't set (Case Dependent) so we use beq to branch to char_1: is this is so.

If Case is Not Dependent we continue to the bclr instruction. bclr or Bit Clear will clear a single bit in a Register—the bit doesn't have to be set to be cleared. After bclr the bit will be cleared to 0 regardless of its previous condition. It will also move the previous value to the zero flag but we won't be making use of that. Clearing bit 5 of d2 effectively changes every Upper and Lower Case letter to Upper case. The difference between Upper and Lower case characters is 32 that is represented by bit 5. The actual search\$ and main\$ values won't be altered. The only change is to the character after it has been read into a Register.

Character Case Modification

e.g. A string "Super Card 3" will be modified to:-

Character	Binary Code	bclr #5	Character
S	01010011	01010011	S
u	01110101	01010101	U
p	01110000	01010000	P

e	01100101	01000101	E
r	01110010	01010010	R
(Space)	00100000	00000000	
C	01000011	01000011	C
a	01100001	01000001	A
r	01110010	01010010	R
d	01100100	01000100	D
(Space)	00100000	00000000	
3	00110011	00010011	

This method is a bit of a cheat. What we should have done is check the Range of values in d2 to see that they fell within the characters 97 'a' to 122 'z' before subtracting 32. Our method will also effect the character groups 0 to 63, 128 to 191 and 192 to 255, But as these groups are largely control codes or graphic or 'foreign' characters this method proves both acceptable and fast. It should be noted that the result is not exactly the same as would be achieved through the BASIC UPPER\$ command.

The initial check on whether the first search\$ character is a Wild card will likely never be used. The same effect could be more elegantly achieved by simply removing the first character from the search\$. But we have to cater for every eventuality. Now we enter the char_1: loop. Past the subi.w and beq instructions that we discussed last month and onto the new line of move.b (a0)+,d3. Previously we could perform comparisons on the main\$ characters to where they were stored in memory, but now we may have to change the case of the characters so we need to move them to a register to do so. btst#8,d4 is performed again to see if the search is Case Dependent and a branch skips the following bclr line if it is.

The comparison is then done between d2 the search\$ character and d3 the main\$ and a branch is made to match_1: if a match has been found. Below the beq instruction there is a second chance of a match should the search\$ character have been a Wild card. If this second match fails as well then we are returned to char_1: to keep looking.

If a match has been found the program continues to check the rest of the search\$ characters with the main\$. The length of search\$ is reduced and if zero the search is assumed a success. Otherwise the next search\$ and main\$ characters are fetched from memory. Now we come across a bit of program that demonstrates what a little thought can achieve. The search\$ character in d2 is checked against d4 to see if it is a Wild card. If it is then there is no need to perform the Case Dependent operation or even the comparison between d2 and d3, The match is taken to be made and we branch immediately back to get the next pair of characters.

Little optimisation tricks like this can shave quite a lot off the final run time of a program. Machine code is very fast indeed but still takes a finite time to execute and a program that calls the routine many times as it works through possibly millions of characters of data will benefit greatly from such improvements.

Only if the search\$ character is not a Wild card character is the Case Dependent bit looked at, just the once for both characters, and a final cmp.b comparison made. The only other changes are the movea.l lines in the failed and success routines found at the end of the program with d4 being added to the list of Registers being restored to its pre search routine value.

Optimisation

The routine is compact and powerful but not especially fast. There are many options open to us to improve the performance of the program but all are at the expense of size. The most obvious target is the Case Dependent checks. By making just one check at the beginning of the search code we could then call Case Dependent or Case Not Dependent version of the search routine. Super Card 3 with its additional Title Search, Line Search and Date Search options has over 20 INSTR routines that proves much faster than one Super Search routine with every option written into it. Duplication of code is weighed against speed of operation.

Our final example this month is a routine that will search through a whole string array returning the element and character position that the text was found. The Case Search has also been optimised into two routines as we discussed above. Load GFA Assembler, execute program GFABASIC.PRG and type in the following BASIC Code.

GFA BASIC Search Whole Array Test Code

```

DEFINT "a-z"
INLINE a_instr%,&H1000
DIM main$(100)
main$(1)="search ss SEARCH"
main$(2)="data ssearch searc"
main$(3)="Search data searched here"
main$(4)="Not in Here"
main$(5)="Test SeArCh searched"
main$(0)="search" ! search$
el%=1 ! Start search Element
ch%=0 ! Start character
wc%=63 ! wild card character
max%=5 ! Max elements to search
PRINT "Element Values"
FOR i%=0 TO max%
  PRINT i%,main$(i%)
NEXT i%
PRINT " Case Dependent"
PRINT "Element","Character"
DO
  INC ch%
  po%=C:a_instr%(L:ARRPTR(main$()),L:max%+1,L:el%,L:ch%,L:wc%)
  el%=LONG(po%)
  ch%=WORD(po%+4)
  PRINT el%,ch%
LOOP UNTIL el%=0
el%=1 ! Start search Element
ch%=0 ! Start character
wc%=63 ! wild card character
max%=5 ! Max elements to search
PRINT " Case Not Dependent"
DO
  INC ch%
  po%=C:a_instr%(L:ARRPTR(main$()),L:max%+1,L:el%,L:ch%,L:wc%+256)
  el%=LONG(po%)
  ch%=WORD(po%+4)
  PRINT el%,ch%
LOOP UNTIL el%=0
-INF(2)

Now save your GFA Code, move to the INSTR line, Press Help
and then 'A' to return you to the Assembler and type in the
following, Remarks are useful but optional.

Assembler Whole Array INSTR + Wild Card + CMD Search Routine

; INSTR Plus Wild card+ Case Not Dependent+Whole Array Search
; Note Registers used, a0,a1,a2,a3,d0,d1,d2,d3,d4,d5,d6
; Store values of used registers for op system, d0 used by us.
movem.l d1-d6/a0-a3,-(sp)
; Get values from Stack and work out VARPTR and LEN values
; Note have moved stack down 10*4 bytes to accommodate movem.l
movea.l 44(sp),a2 ; Get ARRPTR main$()
movea.l (a2),a3 ; main$()Array table
move.l 48(sp),d6 ; max element value
addq.l #1,d6 ; Add 1 for future maths
move.l (a3)+,d5 ; Get Dim? of main$()
movea.l (a3),a1 ; Get posn of search$
clr.l d1 ; Clear rubbish out dl
move.w 4(a3),d1 ; Get Length Search$
beq fail_total ; Quit if search$=""

; Check for zero length of search$
cmp.l d6,d5 ; Compare values
bge m_e_ok ; DIM? Greater or equal?
move.l d5,d6 ; Substitute Dim?()

m_e_ok:
move.l 52(sp),d5 ; Get Start element
bne el_n_z
move.l #1,d5 ; Set element to 1 if 0

el_n_z:
; element not zero branch
move.l #6,d0 ; Ready for sum
mulu.w d5,d0 ; Perform multiplication
adda.l d0,a3 ; Move pointer - element
move.l 56(sp),d2 ; Start Posn
beq d2_is_zero ; d2 is zero, So skip
subi.w #1,d2 ; d2=d2-1 or DEC d2

d2_is_zero:
move.l 60(sp),d4 ; Wild card+Case Search
; Set up store pointer with special lea relative command
lea data(pc),a2 ; Note reused a2
move.l a1,10(a2) ; Store Posn search$
move.w d1,14(a2) ; Store Length search$

s_loop:
; Array Search Loop
addq.l #1,d5 ; Current array Element
cmp.l d6,d5 ; More than max yet?
bpl fail_total ; Yes - Search failed
movea.l (a3)+,a0 ; Get Element posn
clr.l d0 ; Ready d0
move.w (a3)+,d0 ; get length
beq s_loop ; Don't try for len 0
movea.l 10(a2),a1 ; Restore Search$ Posn
move.w 14(a2),d1 ; Restore Search$ Len
bsr search ; Call search: routine
clr.l d2 ; Reset to 0
cmpi.w #0,d0 ; Return value ?
beq s_loop ; Not found keep looping

; Got here, search success
subq.l #1,d5 ; Reduce element value
move.l d5,(a2) ; Store element
move.w d0,4(a2) ; Store Posn
move.l a2,d0 ; Where to find it
movem.l (sp)+,d1-d6/a0-a3 ; Restore registers
rts ; Back to BASIC

fail_total:
clr.l (a2) ; Failed Element value
clr.w 4(a2) ; Ditto for Character
move.l a2,d0 ; Where to find it
clr.w (a2)
movem.l (sp)+,d1-d6/a0-a3 ; Restore registers
rts ; Back to BASIC

*****
search:
move.l a0,(a2) ; Store VARPTR main$()
alc

```

```

; check valid input, Return 0 if not.
adda.l d2,a0 ; Increase main$ address
sub.w d2,d0 ; Dec length of main$

; Check search$ not bigger than main$
cmp.w d1,d0 ; D0 smaller than d1 ?
bpl not_bigger ; Branch if plus, d0>=d1
clr.l d0 ; Failed, main$<search$
rts ; Return

not_bigger:
; OK to carry on
sub.w d1,d0 ; Take off len search$
addi.w #2,d0 ; Put 2 back

;Store values in data store, Register values can now be changed
move.l a0,4(a2) ; Posn of main$
move.w d0,8(a2) ; Length main$
btst #8,d4 ; Check for Case Depen
beq cd ; Bit not set, Case Dep
bsr search_end ; Call Case Not Dep
rts ; Return
cd: bra search_cd ; Call Case Dependent
rts ; Return

;*****
search_cd: ; Start Routine + Jump back point
move.b (a1)+,d2 ; Get 1st Search$ char
char_1: ; Find first character loop
subi.w #1,d0 ; Reduce main$ length
bne not_zero ; Not there yet
clr.l d0 ; Zero,Failed,End main$
rts ; Return

not_zero: ; More main$ to search
cmp.b (a0)+,d2 ; Compare to main$ char
beq match_1 ; Match, Look for rest
cmp.b d2,d4 ; Search$ char=Wild card?
bne char_1 ; No so keep looking

; Yes is Wild Card, Drop down to match_1
match_1:
;Got here match found, Look for match rest of search$
;Remember where we are in main$ first
move.l a0,4(a2) ; Remember Position
move.w d0,8(a2) ; Remember Chars left
rest_chars: ; Search rest of characters loop
subi.w #1,d1 ; Decrease len search$
bne cont ; Not end yet
bsr success ; End Search$ OK!
rts ; return

cont: ; Not there yet, Keep searching
move.b (a1)+,d2 ; Get next search$ char
cmp.b (a0)+,d2 ; Cmp next main$ char
beq rest_chars ; OK so far
cmp.b d4,d2 ; Wild Card ?
beq rest_chars ; Yes so OK as well

; Got here - Failed so far, Set up and go back to char_1: search
movea.l 4(a2),a0 ; Restore last posn main$
move.w 8(a2),d0 ; Restore len main$
movea.l 10(a2),a1 ; Position of search$
move.w 14(a2),d1 ; Length of search$
bra search_cd ; Go back look 1st char

;*****
search_end: ; Jump back + routine start Case Not Depend
move.b (a1)+,d2 ; Get 1st Search char
cmp.b d4,d2 ; Wild card ?
beq char_lb ; Yes - Skip Case Op
bclr #5,d2 ; Set to Upper Case

char_lb: ; Find first character loop
subi.w #1,d0 ; Reduce main$ length
bne not_zerob ; Not zero yet
clr.l d0 ; Zero,Failed,End main$
rts ; Return

not_zerob: ; More main$ to look at
move.b (a0)+,d3 ; Get main$ char
bclr #5,d3 ; Set to Upper Case
cmp.b d3,d2 ; Compare chars
beq match_lb ; Match, Look for rest
cmp.b d2,d4 ; 1st char=Wild card?
bne char_lb ; No so keep looking

; Yes is Wild Card, Drop down to match_1
match_lb:
;Got here match found, Look for match rest of search$
;Remember where we are in main$ first
move.l a0,4(a2) ; Remember Position
move.w d0,8(a2) ; Remember Chars left
rest_charsb: ; Search rest of characters loop
subi.w #1,d1 ; Decrease len search$
bne contb ; Not zero yet
bsr success ; Found it !
rts ; Return

contb: ; not there yet, Keep Looking
move.b (a1)+,d3 ; Get next search$ char
move.b (a0)+,d3 ; Get next main$ char
cmp.b d4,d2 ; Wild Card ?
beq rest_charsb ; Yes so skip check
bclr #5,d2 ; Make UPPER Case
bclr #5,d3 ; Also Make UPPER Case
cmp.b d2,d3 ; compare chars
beq rest_charsb ; OK so far

; Got here - Failed so far, Set up and go back to char_1: search
movea.l 4(a2),a0 ; Restore last posn main$
move.w 8(a2),d0 ; Restore length main$
movea.l 10(a2),a1 ; Position of search$
move.w 14(a2),d1 ; Length of search$
bra search_end ; Go back look 1st match

;*****
success: ; Found match! Work out Relative Posn found
movea.l 4(a2),a0 ; Restore found pos
suba.l (a2),a0 ; Sub Start of Main$
move.l a0,d0 ; Copy to return Reg
rts ; Return to BASIC

;*****
data: .DC.l 4 ; Reserve data store 4 long words.

```

Finally, save the code, assemble and return to Basic to try it out. I've run out of space this month so you'll have to wait for a full description of the code. In the meantime have a go at working it out for yourself. T.T.F.N.

Shareware Column

This month Joe Connor takes a breather while Andrew Lee writes about his UK support scheme for GEM Spooler...

No new releases of the Shareware that I'm supporting this month but Graeme Rutt has just announced his second program (Graeme also supports GEMView) called 'Edith Professional' which Graeme reckons is far and away the best editor he's seen for the Atari platform.

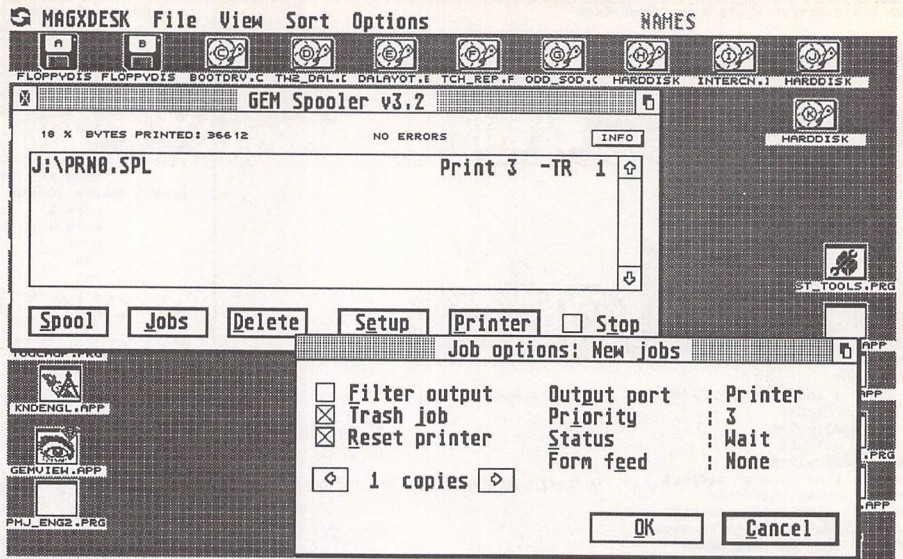
I bought a copy and some of the features are very tasty indeed. Edith's sexy 3D interface on the Falcon (or with sixteen or more colours) combined with the allure of her voluptuous feature list left me panting for breath. (Oh dear...) Everest remains my general purpose editor but Edith's ability to run as an Accessory along with an excellent sixty-page A4 printed manual makes her useful to have around.

Edith lives in the shadowy world between commercial and shareware software. There is a demo available, which enables you to try all the features out but you cannot save at all. Order Fast Club disk: NW.01

The full version of Edith Professional costs £35 but if you place an order before September 30th 1994 you can take advantage of the special offer price of £22. To order a copy of Edith send a cheque or postal order for the correct amount to:

Edith Registration, Graeme Rutt, 4 River Terrace, Washbank Road, Eynesbury, Cambridgeshire PE19 2TE.

The latest beta of Two-in-Onenow sports a new dialog to handle external programs in a more flexible way. It's now possible to set up to eight external programs, including GEM PRG, APP or GTP programs along with the usual TTP files supported by previous versions. Each program can be configured with command line parameters and file extenders. For example, the latest version of ESS Code can be called to handle uuencoded mail instead of the limited TTP version previously supported and the program version of ST Guide can be called for on-line help if the ACC version isn't available. More details when the release version is finalised.



GEM Spooler – Set Your Applications Free!

This month a guest appearance by Andrew Lee who's supporting 'GEM Spooler' in the UK.

Multitasking is with us at last—oh what fun it is to switch from word processing to comms to DTP and back again all at the touch of a button; isn't it great to start a program printing and then switch to another task? Unfortunately it isn't, because most applications (with the notable exception of Papyrus) take total control during printing leaving you wondering why you bothered multitasking in the first place.

There are plenty of programs (for example Multiprint) which divert printer output to RAM but we all know how quickly RAM gets gobbled up by 'modern' applications and in a multitasking environment you're even more likely to run short of memory. Other multitasking platforms use disk spoolers in preference to RAM spoolers and now GEM Spooler offers this solution for the benefit of Atari users.

GEM Spooler is programmed by Steven Van Rossen and Marc Billiet in Belgium and works by redirecting data sent to the printer or modem ports to files called 'Jobs'. Each and every output creates another job file and these form an orderly queue to be processed in FIFO order (First In, First Out).

GEM Spooler runs on all Atari machines under all official TOS releases, including MultiTOS. All the latest popular GEM enhancements including the Gemini AV-protocol, Skydial dialogs, Pop-up menus, Drag and Drop are implemented.

Gem Spooler is Keyware. The unregistered version is fully functional but limited to jobs less than 200Kb in size and includes a Shareware reminder screen which appears over the main dialog.

The unregistered version of Gem Spooler v3.2 can be obtained from most PD libraries. (Order FaST Club disk no. NW.05.)

UK Support and Registration

To register your copy:

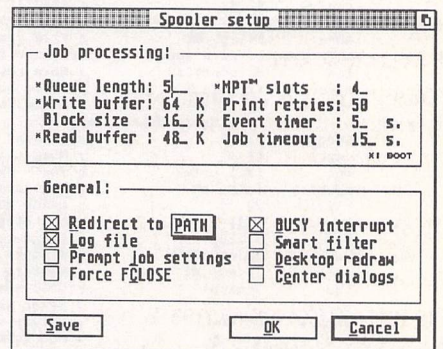
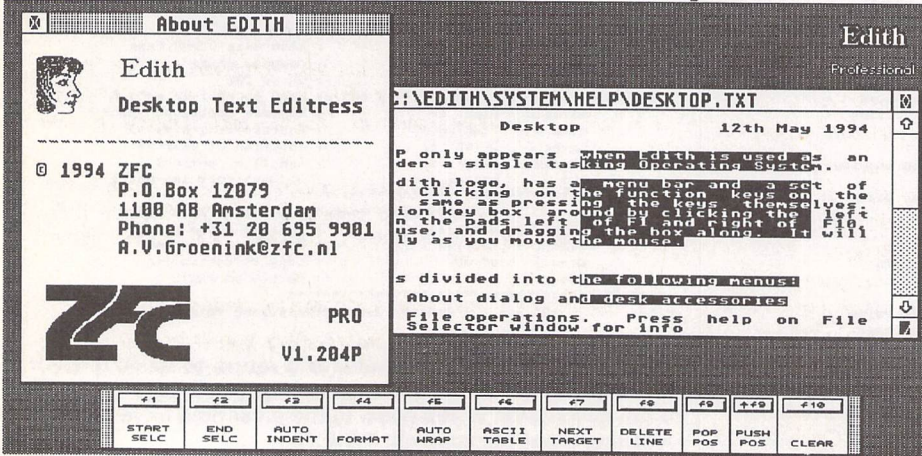
- Make a cheque for £13.00 payable to Andrew Lee
 - Be sure to include your name and address in a legible format as it's used to generate your key.
 - Send to: Andrew Lee, Parkend House Hotel, Nr Lydney, Gloucestershire GL15 4HL
- Please do NOT send cheques to the FaST Club as this causes unnecessary delay and expense.

After registration you will be Emailed or posted your personal 'Key' which installs the registered-users-only features.

Registered users can obtain the latest English Version at any time by sending a Stamped Addressed Envelope enclosing a floppy disk to the address above. I can also be contacted by Email:

ajl@cix.compulink.co.uk.

EDITH File Edit Text Search Options Windows Config



Version	Software	UK-Fee	Status
V1.70e	Kandinsky:	£15	Shareware
V1.10e	Selectric:	£13	Shareware
V1.07e	Two-in-One:	£ 9	Shareware
V4.8	GFA Flydials	£13	Shareware
V3.3e	Everest:	£ 9	Shareware
V1.52i	Egale:	£10	Shareware
V4.7	GSZRZ:	£13	Shareware
V1.25e	OCR	£8-12	Freeware
V29.06.94	ST-Guide	£ 5+	Fairware
V3.5e	Idealist	£13	Shareware
V1.8e	Adresse	£15	Shareware

PD and Shareware Update

Version 14.7 ~ September 1994

Premier Range Disks:

Disks in this update with two-letter prefixes cost £1.25 each (£1.00 to subscribers).

Standard Range Disks:

Disks with a three-letter prefix cost £2.75 each (£2.00 to subscribers)

Entertainment

EN.805: AGT Adventure Games:

By compressing the data files and supplying just one copy of the PRG shell we have managed to cram a great collection of adventure games on to just one disk. The games are:

BATTLE OF PHILLIP AGAINST THE FORCES OF CREATION — well constructed D&D type adventure.

CRUSADE — nicely done, despite the plot: rescue the Princess from the evil Baron, steal his treasure and marry the Princess.

MAGIC MANSION — exercise your brain in order to get out of the Wizard's basement.

PORK 1 — great little parody of that old classic Zork.

PORK 2 — more of the same, this time with lewd and tame modes!

PYRAMID OF MUNA — hunt for treasure in the pyramids.

QUEST FOR THE HOLY GRAIL — oddball nonsense based on the Python film.

SIR RAMIC HOBBS AND THE HIGH LEVEL GORILLA — Lots of puzzles in this 'Rescue the Princess' saga; the title says it all!

SQUYNCHIA — a D&D type game.

STAR PORTAL — Sci-Fi adventure based on Mars.

STORMS — Good fun adventure as you track down the secret invention in order to inherit the legacy.

Information and Magazines on Disk

INF.72, INF.73, and INF.74: Power Disk Magazine issues 16, 17 and 18. Interesting disk mag from UK publishers Power. The interface is, sadly, written in STOS and does not work on mono systems, and the articles tend to be on the short side. But otherwise a good start and worth a look. New issue comes out each month.

INF.75: Inside Info #70: Looks as though ACE New South Wales are going through a bad patch as this issue of Inside Info is a long way short of the info packed disks we've become used to. The editorial opens with: "Question: What does the ACE editor do? Answer: Stuff all! The Secretary does it all!" This issue features: F16 Club info, File extensions listing, and details on the latest modems from US Robotics. Programs on the disk are:

COCKTAIL — A specialised database, containing recipes for 600+ cocktail drinks, with facilities to modify the data. (C)

PHOTOCHROME v2.01 — graphics card emulator.

SYINFO — produces an ASCII text file that gives comprehensive information about your system.

Teddy-TERM v2.00 — Easy-to-use terminal package that features advanced features such as auto learn logon, auto logon, auto capture buffer, small text in both medium and high rez and even works on non ST standard screens such as TT's, Falcon's, Crazydots etc...

IN.506

"ST News" Volume 9 Issue 2

The latest issue of *ST News* features:

Interviews with the cream of humanity — Yngwie Malmsteen, Sietse "Slimer" Postma, Sleazy P. Martini Of Gwar, Stuart Coates, Napalm Death, Anne "Dragonriders of Pern" Mccaffrey, Obituary, Dan "Neodesk" Wilga, Entombed, and many more!

A totally revised and utterly extended disk magazine roundup!

The biggest cheat code and passwords listing ever! — more cheat codes and passwords than ever before assembled in any publication. Apart from hundreds of regular cheat codes you will find lots of Lynx ones and even some for the Jaguar.

Adventure solutions: The Colonel's Bequest, Sex Vixens From Outer Space, Dreamzone, Bill & Ted's Excellent Adventure, and more!

A report on the half-century D-day anniversary by a French 2nd Lieutenant. (Not an ST in sight, then or now. What next, recipes for BBQ sauce?)

Reports from some of Europe's biggest festivals!

Literary Bits! — Including the not-very-long-awaited "Oh Yeah" part 3 — "The Third Encounter of a Close Kind". And more that's probably a lot better, such as "North" and "Legacy of the Howling".

Reviews of the Jaguar (games console), ST Handbook (rag), Sleepwalker (STE game), Imagecopy 3 (utility), Caspian Software's Rock 'n Roll Clams (game), Tempest 2000 (Jaguar game) and more!

Unbelievably hot news about forthcoming music and films!

Complete Falcon software compatibility list! Now you can see for yourself what old and recent stuff doesn't work on the Falcon and, vastly more important, what does. It is probably the most complete list of its kind (it says here).

New Submissions

This new Premier Range category of disks contain newly submitted files that have yet to be fully catalogued or distributed on to the category specific disks. This has the advantage that we can get files out faster than is possible when we have to evaluate what type of disk a file should go on to. It is also a boon to customers who do not want to have to buy a disk of utilities that they already have just in order to get one new or updated file.

The contents of these disks are archived (with the same UNLZH system used on other Premier Range disks) and the disks cost £1.00 each to ST Applications subscribers, £1.25 to other customers.

A note to back issue readers: you can only order these disks within twelve months of the cover date on this magazine. After this date these disks will be withdrawn and their content put on to other categorized disks. Take a look at our latest catalogue to track down the new location of the files that you are interested in.

NW.01:

New Submissions #1

CAESAR — cheats.

CF4 WORK — Converts between CardFile4 and Atari Works database files.

CHEATS — for Caesar, Crime City, Ishar 2 and Legends of Valour.

CORNER SHOP VIDEO v1.95 — database for small video libraries. Not sure about this one, the first menu contains the classic line "week starts hear". (C)

CRIMECIT — cheats for Crime City.

DESKICON — 200 icons for use with TOS 2+.

DESKPIC — loads a picture as a Desktop tablecloth (wallpaper). Will load NEO, DOO, PAC, IMG, GIF and TGA files.

EDITH DEMO — see this month's Shareware Column.

NW.02:

New Submissions #2

ADRESSE — good address database. See last month's Shareware Column; also on disk UT.140.

FILE CATALOG — creates a list of all the files on your floppy and hard disks, with options for doing incremental backups to the database for easily updating the database.

FINDER — hunts out files containing specified text strings.

GENERAL GDOS — displays and prints installed GDOS fonts.

GLOSSIT — demo of a Hypertext program.

GOOD — well thought out and user friendly hard disk backup utility.

HOW FAST — Tests the read/write speed of any drive or partition. (G)

HTU — database for high scores!

LEDPANEL v2.3 — displays drive activity at top right of screen.

LOCK UP — encode/decode files with a 7-character password.

LPAK — test version of a (type of) disk doubler. Works on floppies as well as hard drive, but is not transparent in that it needs files to be compressed by hand.

MDIAL — MultiDialog puts dialog boxes into GEM windows.

MONKEY — macro key ACC that supports sets of up to twenty

macros, of up to 127 keypresses each, which may be swapped automatically each time a new program is loaded.

NC_MONO — good mono emulator that is loaded from a floppy's bootsector!

NOSEY II — text locator in which you can specify up to 50 files to be searched for a word or phrase. PRG or ACC.

NW.03:

New Submissions #3

3D BUTTON — adds a 3D look to windows, alert boxes, dialog boxes and buttons when using MINT (or early versions of MultiTOS).

ADR RIPPER v1.05 — captures music and graphics from programs. Recognises chip music written by Mad Max, Count Zero, TAO, Big Alec, Lap; as well as MODs produced by Insignia, TCB, and conventional soundtrackers.

ANDYLOAD — packs games into two files, a loader and a data file.

ARTIFICIAL WEIRDNESS — generates humorous re-writes of text files.

BFRD v1.0 — Copies the bootsector, FATs and root directory of hard drive partitions to a file. No substitute for a proper backup, but does allow quick recovery from accidentally deleting files. Backup file can be kept up to date by running BFRDBU from the AUTO folder.

BUBBLE BOOK — displays a flashing "I'm Here!" speech bubble when you lose your mouse pointer, especially useful with the ST Book!

CODE v1.05 — universal code sender CPX that sends control codes to your printer, modem, screen or Midi device. Although a number of drivers are supplied, instructions are given for creating

your own. (G)

COPY MULTI v1 — multi-tasking disk copying program.

CPX BUILD — helps programmers build CPX modules (\$C).

DAY DATE — works out day of the week for any date.

DC SEA v2.0 — Converts ARC, LZH, ZIP or ZOO archives into self-extracting archives.

SYNERGY DEPACKER — unpacks compressed files.

DM2WORK — converts Data Manager files into Atari Works database format.

FILE MOVE — gives TOS 1.0 and 1.2 the file Move facility available as standard in later versions of TOS.

GEMRAM v1.6 — Copies GEM to RAM so that system patches such as WINX can patch the TOS code.

GREETING v1.03 — prints a welcome message each time ST boots up.

HPDUMP — installs ALT+HELP screendump routines for HP Laser/DeskJet printers.

ISHAR SURVIVAL KIT — hints, tips, maps and character editor for Ishar—Legend of The Fortress.

LZH SEA — creates self-extracting archives files from LZH archives.

M-DISK v6.94 — multi-function ACC. Features: ramdisk, copy files to ramdisk, save ramdisk's contents to a disk, format disk, get info on any drive, and virus check floppies.

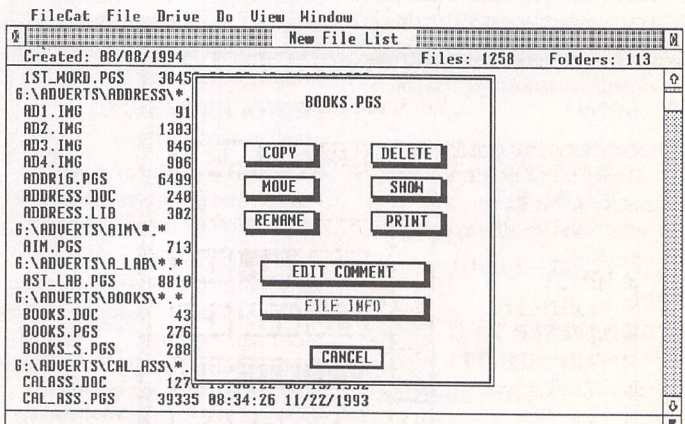
MONITOR MAGIC — sets up green and amber colour screens for improved clarity.

NEW DEPACK — recognises and depacks 126 different types of packed files. Very useful batch mode to depack folders full of files.

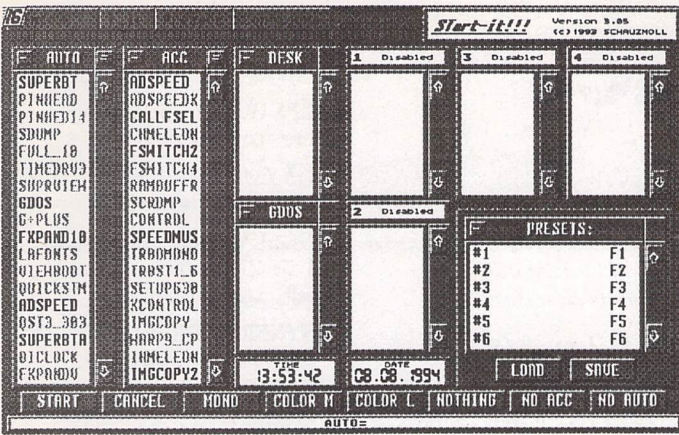
KEY

- (M) Runs in high Resolution only
- (C) Runs in Medium or Low Resolution Colour only
- (1Meg) Needs at least one megabyte of RAM
- (G) Program and documentation are in German

Disks with a three-letter prefix cost £2.75 each (£2 to ST Applications subscribers). Disks with a two-letter prefix cost £1.25 each (£1.00 to subscribers).



File Catalog from NW.02



Start It v.3.05 from NW.04

TUW-TCP/IP – network utility that allows an ST to become a part of any TCP/IP network as an independent host. Telnet and FTP supported, other Internet services promised.

UNDELETE – good file undelete utility. (\$C)

VIDEO MANAGER v4 – keeps track of what's in your video tape collection.

WINX v2.2 – gives many Multi-TOS style facilities, including: increases the number of windows you can have open on the Desktop, fixes numerous bugs, and lets the right mouse button do extra functions with TOS 2.0+.

WORKSUPD – bug fix for spell checker/thesaurus in the American version of Atari Works.

NW.04:

New Submissions #4

PAGESTREAM TEMPLATES – adds standard crop marks to PageStream 2.2 files.

POWERDOS – multi-tasking GEM replacement. Very little documentation...

RESET – plays music and displays a picture on reset.

RINO – document displayer in which each item in the drop-down menus loads a text file. Lots of potential applications.

RUNES – fortune telling with rune stones. (C)

SAFESAVER – screen saver.

SHBUF 1.3 – increases size of the NewDesk.Inf buffer. Needs GEMRAM.

SPD2EXE – Converts Speed-packer v3 programs into completely stand-alone files. (C)

SPECCY – German ZX Spectrum emulator. Needs Interface-1 and a null modem cable to get a copy of the Spectrum ROMs into the ST.

ST DIARY – diary program with one page per day, an eight-page notepad, calendar, and facilities for handling annual events. (M:1Meg)

ST ZINE – lets you create your own disk magazines with pictures, text and tracker music.

START IT v3.05 – comprehensive set-up at boot-up package. By using the ZeST interface, Start It manages to incorporate windows, drop down menus and an item selector to make setting up a lot easier. Bells and whistles include on-line help, memo facility, and keyboard shortcuts.

STOS FIXER v2.7 – fixes any STOS program to make it work on the version of TOS in your machine. Even fixes many Falcon incompatible programs.

SUPREME SCREEN SNATCHER – interrupts a program, grabs a screen and saves it in Degas format. Can also search through memory for graphics.

NW.05:

New Submissions #5

GEMSPPOOL – See this month's Shareware Column.

TABLEMAKER v2.56 – design and lay out tables for displaying data. Gives control over 3D effects and borders, and output may be saved as an IMG file. (C)

TT ART – TT screen saver.

Budgie Games

These disks are Licenceware and cost £2.75 each

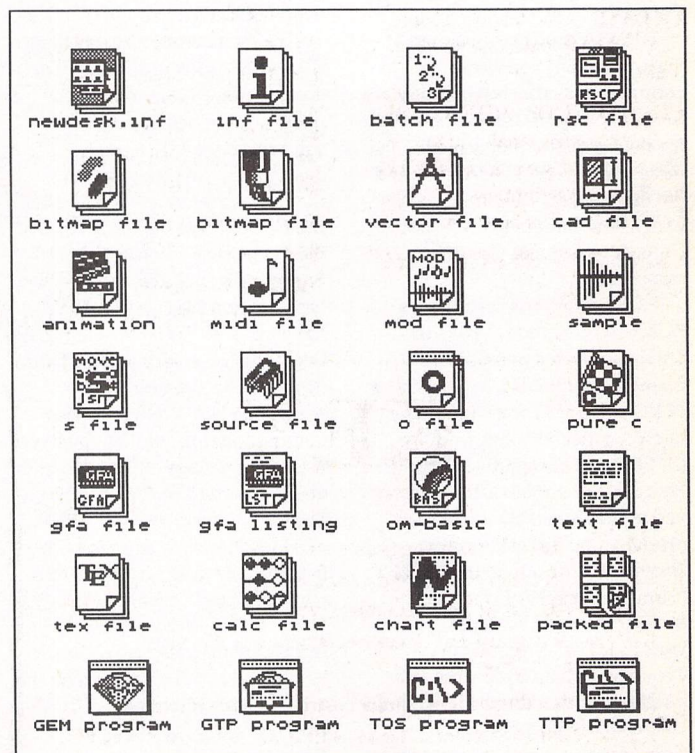
GBU.125: OVERSCAN INVADERS by Jan Dean. The most phenomenal programming feat on the ST yet: a superb version of Space Invaders with full screen overscan! All four borders have disappeared. The action covers the ENTIRE screen (384 pixels by 313), with 4-channel digitized sound and 32-colour graphics. Playability is guaranteed. To cap it all, the entire assembly language source code is included!

Demo Disks

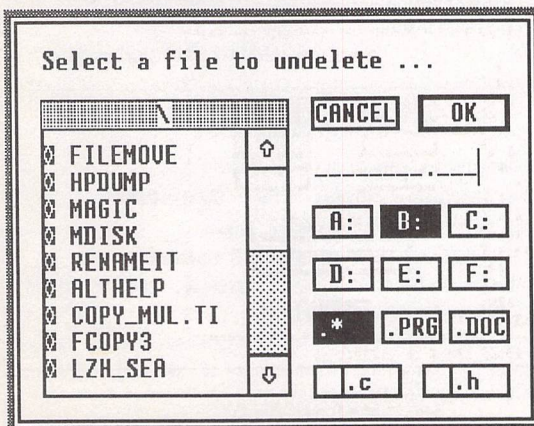
These demonstration versions of FaST Club commercial software titles cost just £0.75 each.

D.02: Fonty: this demo is now a 'save disabled' version of the latest version of Fonty, version 1.10.

D.11: Imagecopy 3: All functions are enabled but output will always have a watermark on it. Program only supplied; the full version includes an Accessory version. Same as the ST Review cover disk demo but many more sample picture files.



Some of the 200 icons for TOS 2+ available on disk NW.01



The facility to 'undelete' selected files can be found on NW.05

Going On-Line

HENSA

*An interesting place to connect to on the Internet, especially for Atari users, is HENSA
—the Higher Education National Software Archive based at Lancaster University.*

Mark Baines

Lancaster University for a long time provided a distribution service for the Kermit file transfer program and its source code. I still have a version on my hard disk from 1986! It was clear that the UK needed a large archive site for public domain software for all the makes and types of computers serving the higher educational community. The NPDSA—National Public Domain Software Archive—was created by Alan Phillips (now the Senior Comms Programmer at Lancaster University) in 1988 to provide a Value-Added Service to JANET (Joint Academic NETwork). In 1990 a grant was obtained from what is now called the JISC or JANET Information Services Committee putting NPDSA on an official footing.

The University of Kent at this time was handling the distribution of UNIX PD software in the UK and it was decided to join the resources of the two services under the names of HENSA/micros at Lancaster University and HENSA/unix at Kent University.

HENSA is primarily aimed at the on-line UK academic community as that is what they are funded for by the JISC who pay for the hardware and wages of the three staff at HENSA/micros and the three at HENSA/unix. Lancaster University and Kent University provide the offices and resources.

HENSA/micros runs from a SUN Sparc 10 model 40 with 18Gb disk space and 96Mb memory and holds a huge archive of PD software for a wide range of micros, especially Atari, Amiga, IBM PC and compatibles, Apple Mac and Archimedes. It also stores and makes available information produced by Special Interest Groups which include the CHEST (Combined Higher Education Software Team), materials for various CTI (Computers in Teaching Initiative) centres and information held by the IUIIC (Inter University Information Committee) which promotes and develops information services in higher education.

All software available from HENSA/micros is supported by the three moderators as they evaluate everything that is uploaded to them. Software is also tested for viruses (although they can't guarantee the software to be virus free) and sometimes reviews and bug reports are also produced. The moderators also support their own conferencing system called NIX (heNsa Information eXchange) where users can exchange ideas and discuss problems. WWW pages are also available with the right software and HENSA also provides gopher, telnet, dial-up, X.25 access, PSS, X.29 access, mail server and soon, fsp. People can register for NIX.

Atari

The moderator of the Atari and Mac sections is Denesh "Danny" Bhabuta (danny@micros.hensa.ac.uk) who also mans the hot-line. Denesh is an Atari user himself and has great plans for the Atari section which up to now has been rather neglected.

The Atari section has the latest PD and Shareware software for downloading at any time. All packages are held in their own subdirectories with a brief description file with the .MSG filename extender which you can read before downloading to see if the file is what you wanted.

Sometimes available are .RVW 'review' text files and/or .BWR 'beware' files listing problems and bugs which are very useful. These descriptions can be also searched via a WAIS database under gopher providing you have the right software. All packages are keyworded so they can be browsed via gopher and WWW.

Denesh tries to keep the file lists up to date as far as possible testing all the software before it goes on-line to make himself familiar with it. He also claims to be choosy about what goes on the archive aiming to make HENSA the repository for all the best Atari PD software.

A very useful service worth receiving if you have an Internet

address is the mailing list newsletter. For every thirty packages (ten for MiNT and Falcon files) that are put on-line, a newsletter is created and sent out to people on the mailing list. This contains a brief description of each new file and the directory path and filename. The description often contains some very useful comments and notes by Denesh.

You can get on the mailing list by sending an e-mail to the mail server at "archive-server@micros.hensa.ac.uk" with no subject. The message should contain the lines:
subscribe <list> "your real name"
logout
where <list> is either atari-tos, atari-mint or atari-falcon, for instance:
subscribe atari-tos "Mark 5 Baines"

Back copies of the newsletters can be found in micros/atari/tos/news. Help can be obtained with a one line message containing the word "help".

Please note that the mailing list database will accept all UK academic e-mail addresses, all CIX addresses and some .org and .com addresses. Demon and Exnet are not accepted by the system but e-mail Denesh anyway at pddanny@micros.hensa.ac.uk.

Accessing HENSA

See the box for various ways to get onto HENSA. ftp access is restricted to only five remote (outside ac.uk community) connections during office hours. This increases outside working hours and at weekends. There are no restrictions on dial-up, if you can get through.

The easiest is perhaps anonymous ftp at micros/hensa.ac.uk using "hensa" at the Name: and Password: prompts.

Atari files are contained in the /atari directory and /tos, /mint and /falcon subdirectories. These directories contain each package in their own subdirectory which consists of a four character code. The first character is a letter and is the name of its parent directory.

So, for instance, a list of Atari ftp sites can be found at the path micros/atari/tos/n/n168/ftplist.txt. Typing

"cd~ /micros/atari/tos/n/n168" will get you there and "get ftplist.txt" will download it. Binary mode and hash appear to be default.

Files can be uploaded to HENSA/micros by putting them in the /atari-tos, /atari-mint or /atari-falcon specific subdirectories in the /incoming directory. Kermit and XYZmodem do not yet work for uploads if dialling up.

HENSA strives to provide a solid and reliable service for people in higher education who may not be computer literate. The Atari section is in good hands and I look forward to future developments with interest.

E-mail:

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

Accessing HENSA

via ftp, telnet, gopher: micros.hensa.ac.uk or 148.88.8.84
via Terminal Access (JANET): uk.ac.hensa.micros or 000010403000
via WWW (such as Mosaic, Lynx): http://micros.hensa.ac.uk
via Dial-up: (0524) 843878 (speeds up to 14400bps) 4 modems on-line
via PSS: through the Rutherford Appleton Gateway: 23422351919169
Authorisation and address for this: .000010403000
Name: and Password: are "hensa". For ftp you can also use the normal "anonymous" or "ftp" at Name: and e-mail address at Password. WWW and gopher do not require Name and Password.

Graphics Arts

Paul Keller

TECHNIQUE – Text

The art of using text, or 'typography', to give it its technical name, is both a vast and technical subject and one of its chief functions is in the communication of ideas in a written form.

The main use of text for most computer artists is probably in the creation of titles, which are linked to pictures he or she may have created.

In this written form the text if properly utilised forms a part of the pattern within the picture itself. The shape and form of the text portrayed can convey as much meaning wished as the mental understanding of reading that which has been written. Therefore even to the amateur artist a good choice of text with a basic understanding of its correct and intelligent meaning is of much use and of great importance.

Fonts

Fonts are different 'sets' of type, these having their characters assigned to the equivalent keys found on the computer keyboard.

There is a great variety of different fonts available to the computer user of today, especially for anyone who is involved with desktop publishing. Computer fonts fall into two main categories: those which are 'bitmapped', these being of a rigid nature and are not resolution independent, and 'vector' fonts, which are resolution independent.

Non resolution independent fonts, such as those which are 'bitmapped', lose their definition if enlarged or reduced, while 'vector' fonts, those fonts which are resolution independent, do not lose their detail in the same way. However, 'vector' fonts are still subject to the maximum resolution you are actually working in. This means that when viewed visually or printed they are still limited by the resolution of the hardware you are using.

Of these two categories 'vector' fonts offer a much greater flexibility of use over that of 'bitmapped' fonts by way of size manipulation, and have a larger range of commercial fonts generally available. They also offer a much greater quality of detail (as discussed above).

Type style

The style required, such as bold, italic, condensed, underlined, shadowed, outlined, can

often be applied to the font selected within the computer programme being used.

This adds an even greater flexibility and variety of choice which can be obtained by the artist. Style is also important in the different meanings that it can convey, by its very utilisation. Some of these style meanings may be obvious, others are more subtle and therefore less obvious in their intended message. As an example:-

'Bold' text helps give emphasis to the word portrayed, its meaning is simply 'big'. If used properly it should be used in conjunction with a large type size within the picture, otherwise its meaning can be lost.

'Italic' text helps convey speed. Certain script faces such as 'flash' have a natural italic slant added to them purposely, giving them a free and easy feeling.

'Condensed' text is often used to simply fit more words to a line but can also be used to convey a business image, depending on the font selected and its application to the situation in hand.

'Underlined' text is used to bring both emphasis and importance to those words which are underlined.

'Shadowed' text has to be carefully used if it is to be effective in any given situation. It can help make a font stand out from the page giving it a 3D look when correctly used, when incorrectly used the font will look cluttered and may be difficult to read.

'Outlined' text conveys light, it is also an effect which must be very carefully utilized. Like the application of shadow not all typefaces will benefit from its use.

Combinations of the above type style effects offer even more scope in their usefulness. A good example is that often an outline font can benefit greatly from an added shadow effect, or bold text can be even more emphasised by the use of underlining.

For the beginner, simple experiment will be needed to test the effectiveness of different type styles. But the experienced user will quickly be able to build up an instant picture in his or her mind of what a particular text style may look like.

Size

This is a very important consideration if drawing with purely bitmap graphics, as any deviation or potential change needed in size after initial construction could result in an

image of lesser quality.

It is best to work with Vector fonts where possible, these being more flexible in their nature. They enable the user to change their size easily by selecting the relevant *point size needed. This is important where little space may be available in the picture the artist is working upon.

* Type size is measured in 'points' (72 to the inch) and is the total height measurement from the top of a capital to the bottom of a descender.

Colour

The use of colour with text can also be an important factor in getting across a certain meaning graphically. A light blue text can portray coolness, while a warm red colour, warmth. Eg. If you had a picture of some burning coal and a title or logo in a light blue colour this would be most ineffective in getting across the meaning of warmth!

The effective colour of the text chosen may also be dependent upon the background to which it is positioned. Eg. A yellow title on a white background could prove unreadable. Different combinations of colour should be used very carefully, eg. red and green colours together can look very starry. The use of too many different colours will make your picture look a mess and the text may lose its readability, as well as any meaning you are trying to portray.

Common sense is probably the main thing needed when using different coloured texts. Aim for balance in your work, try to make some of your text or even just a few lines the same colour as the main colours within your picture. This will help create a greater synthesis and more intelligent composition than a piece of text which implies something totally different in its meaning to that of the picture content.

Creating text as an art form can be found to be as much fun as creating the picture. It can be viewed as an integrated part of any picture when used professionally. But it should not be something bolted clumsily on at the end of a drawing session and looking totally separate from the picture itself.

Classroom Computing

This month we take a look at school newsletters, what they offer and how to make them.

Matthew Townsend

SCHOOL NEWSLETTERS serve many purposes in schools, and any school that doesn't currently have one in operation should consider establishing one using the techniques I describe in this article. There are two kinds of newsletters that a school could operate:

* Teacher Controlled Newsletter

This kind of newsletter should be sent out to all pupils, and the students should be asked to let their parents see the newsletter. It could contain information on various things happening at the school, that students and parents would normally be notified about at assemblies or through letters. Also it could contain some examples of students' work, such as poems and pictures.

I would recommend this sort of newsletter to a primary school, where pupils aren't really capable of totally running a newsletter. They could however type their work to be included in the newsletter on an easy-to-operate word processor, and draw pictures directly into the computer or scan them in once they have been produced on paper. Desktop publishing is too time-consuming and complicated for children, in my opinion, when using any of the software currently available on the ST.

* Student Controlled Newsletter

This kind of newsletter is ideal in a secondary school, where most students will have opinions they wish to express. Some business studies pupils can use the newsletter as their practical course work, in

which case a cover price will usually be charged. There is normally an art student who is willing to supply some artwork for both the front cover and inside the newsletter. Articles can normally be supplied by lower school students, who will benefit from the experience of writing articles. Articles don't even have to be all in the same language. Foreign and second language classes can also have a go at producing some simple articles, or if that's too complicated they can produce word puzzles.

In most schools teachers will want to see a copy of the magazine before it is printed. A joke in poor taste could cost the reputation of a teacher. However, schools must be careful that they do not end up censoring the newsletter too much. Opinions cannot be right or wrong, and some pupils may have some opinions that you don't agree with but they do have the right to get their opinions heard, however controversial.

Newsletter Production

I have already mentioned desktop publishing in this article. DTP, as it's better known, is the art of combining text and graphics on the printed page using a computer. The ST is ideal for desktop publishing: it really is power without the price while offering ease of use.

This article is by no means meant to be an introduction to desktop publishing. DTP is a vast topic that you'll have to investigate yourself. There was a series in ST Applications entitled "DTP on the ST" that ran from issue 27 to issue 34 that should help you get started. Also the ST Club sell a couple of books on DTP that you may find interesting. See cata-

logue number 14 for more info on back issues and books.

Software and Hardware

There are three software routes I would recommend you take, all of which allow easy production of black and white newsletters. Other software is either too expensive and over-featured or is not capable of producing quality documents. Colour should not be needed in a newsletter, where production costs should be kept to an absolute minimum. Here are those three pieces of software I recommend:

Timeworks 2

This would be my personal favourite for newsletters. Timeworks is relatively well featured and available at a good price from many retailers. You are already looking at an example of what Timeworks 2 is capable of because the ST Applications team use it. If you want to take this route it may be worth waiting a short while to see if 'Speedo Timeworks' comes into existence. Currently GDOS is

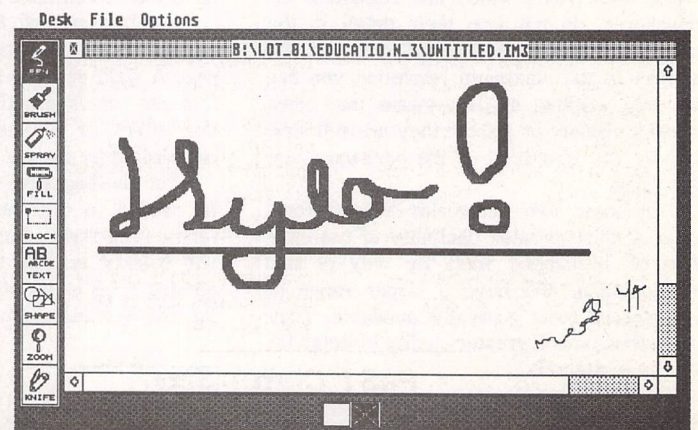
used, which is the bane of many Timeworks users' lives, but with SpeedoGDOS the package would suddenly become even more usable.

Timeworks 2 requires 1 megabyte, but with more memory it could be run from a ramdisc and more fonts can be used.

Easy Text Professional

Having never used this piece of software I can't really comment on how good it is when producing newsletters. That said, it is cheaper than Timeworks 2 and appears to be very similar. If you have a little more money to spare from your budget it may be worth looking at the SpeedoGDOS version of this software, available now. It should make good looking newsletters easier to produce, but demands a better hardware set up.

Easy Text Pro needs 1 megabyte of memory but could benefit from more in the same ways as Timeworks 2. Easy Text Pro Vector, the SpeedoGDOS version, needs 2 megabytes and a hard disk. If the budget doesn't stretch



Hyper Paint is a package that many people have in their software collection and is invaluable when designing graphics for newsletters.

to a hard disk you could use 2.5 megabytes and a ramdisk.

Calamus 1.09N

This is my favourite all-round DTP package, capable of posters and lots more besides newsletters but it could be too complex for a school environment. It uses its own vector font system and so doesn't need GDOS, or SpeedoGDOS, which is good news.

Calamus can be run with 1 megabyte but two megabytes are really needed for longer documents, such as newsletters, where more fonts and pictures will probably be required. Two floppy drives are needed, but in a school the number of floppy disks used will soon build up, and so a hard disk may be called for where the school's budget allows. A monochrome monitor is also needed.

Also...

On top of the DTP software you should purchase a few other goods.

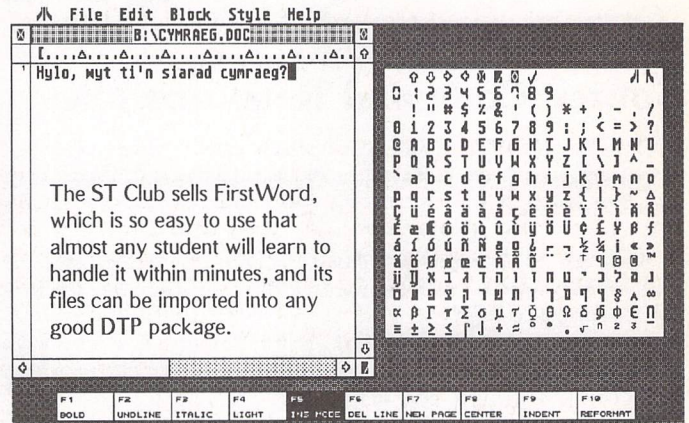
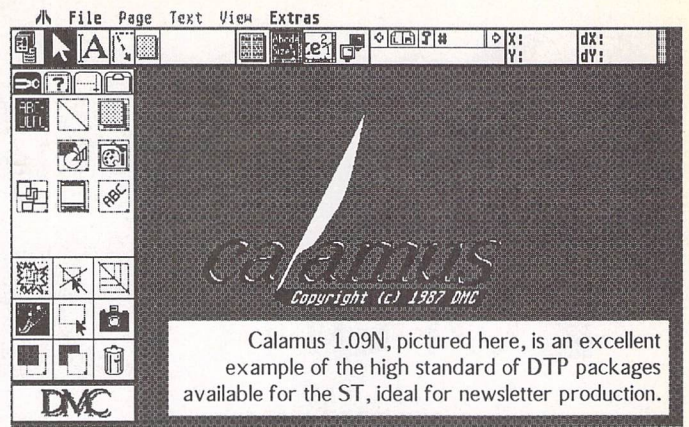
An art package is a necessity, and many are available from the ST Club. Also an easy-to-use word processor such as FirstWord would be ideal in a school. FirstWord is also available from the ST Club. A hand scanner is a luxury that a newsletter could do without, but would definitely benefit from using. Newsletters definitely need clip art, which the ST Club sell a lot of, both commercially and in the public domain.

Printing

An inkjet printer is well capable of printing masters of newsletters. Newsletters can then be printed off using a simple photocopier, which most schools now own.

Pupils benefit from school newsletters in many ways. If you are a headteacher, teacher or even a pupil you should consider setting up a newsletter if your school doesn't already have one. See you next month, then - bye.

The ST Club stocks demo versions of Calamus and Easy Text Professional on disks WP.800 and WP.815.



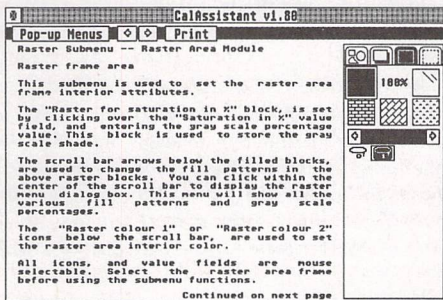
Cal Assistant

The Online Help Companion for *Calamus 1.09n*

£19.95

Fully inclusive.

Also available:
PageAssistant
for PageStream 2
just **£29.95**



- CalAssistant is an accessory program that runs on top of the Calamus software providing online help for each function.
- Includes a 40 page manual packed with tutorials and much, much more.
- Printer drivers included for use with the CalAssistant print command. Send the online help text to printer for hardcopy reference.
- Text, icons and pictures are used to illustrate, explain, and give tips on functions step-by-step.
- Includes complete Helvetica font set (Regular, Italic, Bold, BoldItalic), and requires just 145K of memory.
- Supports pop-up overlapping menus, monochrome and moniterm monitors, and virtual screen drivers such as MonSTER and BigScreen.

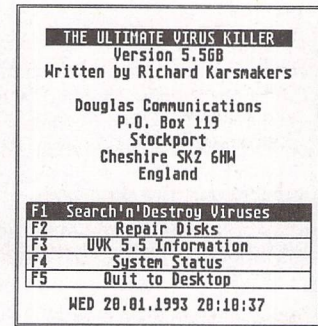


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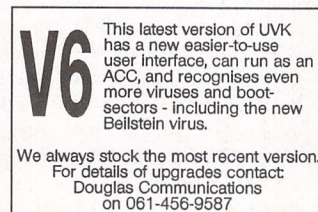
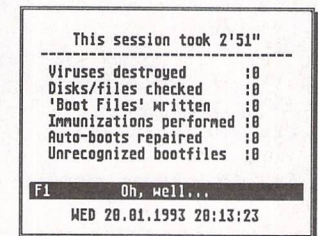
Ultimate Virus Killer

Written by Richard Karsmakers



Features:

- * Recognises all known ST viruses, both bootsector and link viruses, and virtually all software that legitimately uses the disk boot sector.
 - * All data on your disks remains 100% intact!
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 - * Option to repair damaged or destroyed Bios Parameter Blocks.
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 - * Latest version recognises over 70 viruses and can repair over 710 virus damaged boot-sectors.
- With this handy tool, you need not worry about viruses anymore: You can simply use it to de-infect your disks and programs, destroying the virus and leaving all other information intact.



Price: £12.95

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

Beginners' Forum

Mark Baines

Source Code and Resource Files

A letter from Geoffrey M Brown of Aberystwyth prompted this article. Here's what he said:

1. What are "Source Codes"? Many PD programs include these, in various languages, but I have never been able to find out what use they are. Can they be edited?

2. Similarly, what about .RSC files? Several Resource File editors are available, but can these be used by someone who is not into programming? I have not acquired any so far.

Perhaps an example of my need will explain why I am asking the above two questions. My printer is an Epson compatible Panasonic 1124, and the PD ACC 'KXP 1123', which should provide my need, is a bit of a mix-up. Some controls work, others don't, and there are buttons for controls I do not want. Hence I should love to be able to edit/change some of the controls. It is provided with an RSC file and a C Source Code...hence my questions. Can I do a DIY job on these I wonder?

Source code files

A computer uses sequences of bit patterns (various previous articles have looked at bits and bytes, etc.) which when arranged into certain short groups act as instructions to the Central Processing Unit and other chips and devices on the computer circuit board. These instructions are known as machine code and control what the CPU does and ultimately what you see on your screen and how a program behaves. Each type of CPU has its own version of machine code.

These patterns of bits are very hard for us to use directly—they are just series of 1s and 0s. So over the years programmers have developed forms of codes that represent these bit pattern instructions that the computer understands. These representations are called programming languages and use characters, words and numbers more familiar to us. There are many languages and variations or dialects of them. Some are not far removed from the patterns of bits themselves using short character sequences and numbers. These are termed low-level languages and assembly language is an example. On the whole, one line of assembly language carries out one machine code instruction.

Here is some assembly code for the 68000 processor chip, the kind that controls the ST.

```
clr.l      -(sp)
move      #32, -(sp)
trap      #1
addq.l    #6, sp
move.l    d0, -(sp)
eor.l     #1, $484
move      #32, -(sp)
trap      #1
addq.l    #6, sp
clr       -(sp)
trap      #1
```

The 'trap #1' line is just an easily remembered way of representing the machine code bit pattern 0100111001000001.

High-level languages

Even so, many programmers don't find assembler language easy to understand and remember and need something a little more like English. These languages add extra layers in where a word or 'phrase' will bring about many machine code instructions. Such languages are termed high-level languages and include C and BASIC.

Here is an extract from some C which more or less does the same as the assembly code above:

```
int click;
unsigned char oldconterm;
volatile unsigned char *conterm = 0x484;
void *save_ssp;
save_ssp = Super(NULL);
oldconterm = (*conterm) &~ 0x05;
if (click)
    oldconterm |= 0x01;
*conterm = oldconterm;
Super(save_ssp);
```

Immediately you will see that it contains some familiar expressions, an 'if' statement, brackets and equals signs, for instance.

These program languages are written in a text editor and the resulting files are the source code files that Geoffrey is referring to. On their own they are useless. What is required is a means of converting or translating these text files into the machine code instructions that the computer needs so that it can execute the program. There are two types of these translators—interpreters and compilers. Interpreters are programs that enable you to type in programming language instructions and have the computer carry them out one line at a time. No program file is made, your program only exists in the computer's memory at run time and then disappears. The source code only works when run from within the interpreter program.

Compilers take the source code text file and translate it into a file called object code which are the machine code instructions of your source code. This object code is then joined together or linked with other object code files that come with the compiler that contains the machine code instructions for many of the language key words that you may have used in your source code, such as Super(NULL); above. The program that does this is called a Linker and the resulting single file is the program file which can be run from the desktop by double-clicking on it.

Geoffrey asks, "Can they be edited?" Yes, just like any other text file, but I hope you can now see that you need to know how to use that particular programming language and have a suitable compiler and linker program to produce a new program file to run. In other words, the source code files that come with some PD programs are useless to anyone other than a programmer. You may safely dispose of them or at least not transfer them to your hard disk or working floppies.

Resource files

A resource file is a separate file belonging to a GEM program (a file with the extender .PRG or .APP) that contains the AES data structures or objects that form the graphic interface of GEM programs. These objects consist of the menus, dialog and alert boxes, icons, images and text strings that are drawn and manipulated by the resource file's program.

To look at the contents of these files you need a Resource Construction Set program such as WERCS, Interface, NRCS or ORCS - the latter being Shareware and available from the FaST Club on PR.350. They are graphical programs that enable the programs to draw and paste the required objects on the screen to create the forms and other objects of the GEM program interface (apart from the windows which are supplied by the AES part of TOS itself).

Before you start to investigate RSC files for yourself I must warn, as always, to work from copies of the files you intend to explore. It is VERY easy to load an RSC file into, say ORCS, and alter it in some way and accidentally save it in a state that the program file will not recognise. One of the reasons for this is that all the objects in a resource file are ordered and numbered. The program file has the number of these objects coded into it. So one thing you must never do is to alter this

order by sorting, deleting or adding them. There are several things you can do to resource files of interest, but these are complete no-no's. Be careful with ORCS, it does have the nasty habit of altering the order of objects without your knowledge. You have been warned!

Editing resource files

There are several reasons for editing resource files. An increasingly common one is that it is in German, an English version isn't available and you wish to translate it. Another is that the patterns, size of borders and other attributes may not be to your liking. One thing I have done is to redraw the icons at the bottom of the NeoDesk windows, changed border sizes, changed some text from American to English, made several dialog buttons the default ones, altered patterns, hidden other objects and generally tidied it up. All this is possible if you make sure that your efforts do not in any way add to or subtract from the resource file. I have only re-edited the icons, not added new ones. I have used the 'Hidden' attribute to 'delete' some objects but this has not removed them from the file altogether.

Another thing that I often do is to go through the menus of programs and change the symbol for the Alternate key short-cut symbol to my own liking. Some programmers use the Atari character set symbol 5, others symbol 7 or the letter 'a' or [Alt]. It is an easy matter to load the resource file into WERCS and edit them.

Again I must stress that the word I keep using is edit - not create. If you edit an object and effectively change its meaning or purpose then the program won't recognise it and act on it. There is no point in changing a menu item short-cut key from ^W to ^U and expect the program to use ^U from there on. ^W is coded into the machine code by the programmer, and what appears in the resource file is not program code but only a visible reminder to you or a representation of what the programmer intended at compile time. You cannot change his intention. See the Box for a list of things you can and can't do. This is a general guide, some of the 'Can' list may cause problems, such as the Hidden and Default flags. Notice that most of the 'Cans' are cosmetic changes and most of the 'Can't's' are functional.

So finally, to answer Geoffrey's second question, yes you can use resource construction set programs to edit resource files without being a programmer but all you will effectively achieve are cosmetic changes and not functional ones. You certainly won't be able to change the way the KXP 1123 accessory operates unless you reprogram the source code as well. It may be possible to use the 'Hidden' attribute flag in the resource editor to remove those buttons you don't want but not alter the way the others work - that's in the source code.

Lastly, you must remember that any changes to make to a resource file you do for YOUR OWN benefit only. You must not give that

resource file to someone else. You must not redistribute a freeware or shareware program with an altered RSC file without the programmer's knowledge and consent. True public domain programs can be altered and redistributed in any state you wish - that is the meaning of public domain, but make sure that they ARE public domain and not freeware. If the programmer retains copyright they are NOT public domain.

And make those backups!

Send me a letter or e-mail with ideas for future articles. Thank you for the letters received so far. Although I can't promise to respond to all personal queries, I'll do my best if an SAE is enclosed. You will also find me on CIX and the NeST, TurboNet and FidoNet BBS networks where this magazine is supported.

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

E-mail:
 Internet: msbaines@cix.compulink.co.uk
 NeST: 90:105/5; STA support in N.ST.MISC echo
 FidoNet: 2:259/29.10; STA support in ATARIST echo
 TurboNet: 100:106/0.10; STA support in T.ATARIS echo

Using ORCS

Load ORCS, click on a drive icon and folder until your reach the RSC file icon (look for a dog and the letters RSC!).

Drag the icon to the desktop and a window appears with five types of object at the top (figure 1). These are for creating RSC files and must not be used here. The forms that make up the RSC are shown before the horizontal line. Double-click on one. As you move the mouse a cursor shows the bottom right corner of the object rectangle.

Single click on an object to highlight it and a drop down menu appears. You can Hide the object here (figure 2).

Click on Edit to change the object's definition and attributes. Figure 3 shows the form's background Fill pattern being changed.

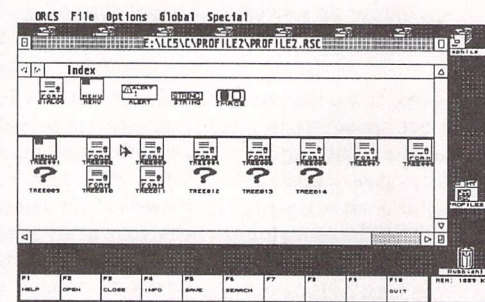


Figure 1

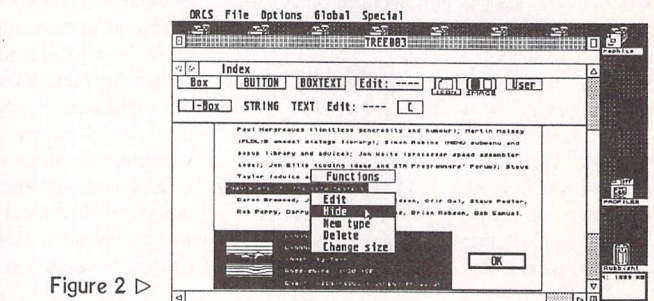


Figure 2

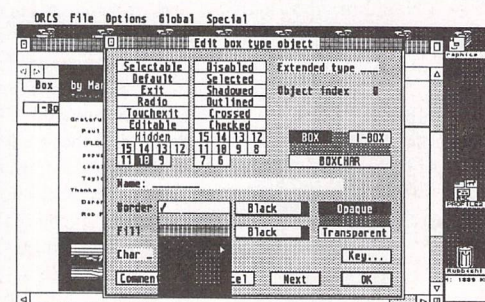
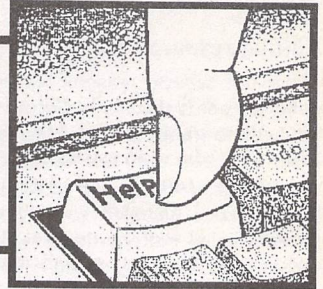


Figure 3

Attributes - Can's and Can't's

Can Change	Can't Change
Pattern	Selected flag
Border colour	Exit flag
Border size	Radio flag
Border position	Touchexit flag
Fill pattern	Editable flag
Fill colour	Disable flag
Character colour	Crossed flag
Most text(1)	Checked flag
Text justification	Object index number
Text size	Object positions
Images	Object type (BOX to IBOX etc)
Icons:	
Image size(*)	
Icon size(*)	
Shadow flag	
Outline flag	
Hidden flag(*)	
Default flag(*)	
(1) be careful with length	
(*) Not always safe	

FORUM



Programming Overload

Keith Powell - Forum STA 44

I am shocked and annoyed by the tone of Keith Powell's comments published in the Forum of issue 44. What makes his letter so offensive is the way in which he attempts to pin unpleasant motives and attitudes on to the authors of articles that are not to his taste. I doubt very much if Mark Butler thinks that those "dim enough to have problems understanding assembler shouldn't be Applications readers". For my part, it is suggested that I look down on Mr Powell as an "inferior being" because he is "not a member of the elite C programming band". Needless to say, this is quite untrue: my opinion of Mr Powell is entirely formed by his distasteful accusations.

Moving on to tackle a couple of the specific

points raised: first, the DevpacDSP review. The first complaint is about the opening lines of the piece. This is not, as is suggested, evidence for me "leading a crusade to take the magazine out of the comprehension of us average readers", but a light-hearted introduction to a complicated review of a niche market product. Perhaps Mr Powell should engage his sense of humour rather than his apparent penchant for conspiracy theories. The review was not written "to prove something", it was written to be informative for the reader who might consider buying the package or one of its competitors. I trust that anyone in this position found the piece useful.

With regard to Programmers' Forum: I believe that in its current format it provides a valuable resource for ST programmers: beginning, intermediate and advanced. Contributions from beginners are now, always have been, and will continue to be most welcome. Indeed, they attract priority during production of the column. The level of discussion in Programmers' Forum is governed largely by the nature of the contribution: if you ask a technical question, you get a technical answer; if you ask a simple question, you get a clear answer, along with some extra detail to deepen your understanding of the issues. My aim is to produce articles that programmers can return to months or years later, and find enough information to help them with their problems at that time. To this end, the column occasionally departs from the question/answer format, to feature particular aspects of ST programming that are of topical interest. The recent couple of articles on CPX programming illustrate this intent exactly.

The concentration on C is largely because it is one of the most popular languages for ST programming. If Powell read the column with insight, he would realise that most questions are of the "how do I?" variety, and are not tied to any particular language. They get answered in C for three reasons: first, it is a natural language for programming the ST (Atari wrote most of the operating system in C, documented TOS features in C etc). Secondly, those who use other languages can still read the listings and see how the programs work—this would not be the case had I elected to answer questions in something obscure like Smalltalk. Finally, C is also a language that I am comfortable with, and least likely to make mistakes in. Since Programmers' Forum con-

tains a lot of software written specially for the column, accuracy and speed of production are important.

Mr Powell's implicit assertion that C is reserved for advanced programmers is blindered nonsense. There are plenty of novice C programmers and highly-skilled BASIC (and other) programmers in the ST world. There is no hierarchy of programming languages: a modern BASIC is intrinsically no better or worse than a modern C system. Small differences may arise in suitability for particular tasks, but by and large either could be used for most purposes. Wherever possible, contributors who ask about particular languages receive help in those languages, either from me or from helpful and constructive readers. Judging by the postbag though, a non-C, non-assembler Programmers' Forum would have scant custom.

Jon Ellis

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

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

Key:

The following codes are used for each Forum entry:

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

Q Question

A Answer

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

● Editorial reply

I was concerned to read Keith Powell's letter in Forum issue 44 regarding amongst others the Beyond GFA articles. The opening remarks in Beyond GFA 1 "A fair understanding of Assembler" was with hindsight unfortunate, "A little understanding of GFA BASIC" would have been better. I appear to have rubbed Mr Powell and presumably many more readers up the wrong way. For this I can only apologise and in my defence can only offer that this was the first programmers' article that I have ever written for any magazine. I would ask Keith and any similarly annoyed readers to take a bottle of liquid paper to the offending lines and then read the rest of the article that then takes you from the very Basics of Assembler. I don't regard myself as an Advanced programmer, more a keen amateur who spends some of his spare time playing computers. Largely self taught, I have done battle with Assembler and Resource File programming to produce a 'niche' database called Super Card. And now have a working but by no means expert understanding of them. It is this knowledge that I now wish to impart to other users so that they can enjoy the machine as much as I do. GFA BASIC is also far friendlier than C, so please give it another go.

Mark Butler

Good magazine—there was never any doubt I would take up the year's subscription

after the (trial period) had lapsed.

While I sympathise with Keith Powell's complaint that ST Applications is becoming too technical, that's the way I like it!

J F White

I I agree with Keith Powell writing in the latest August issue that a lot of space is given to the more advanced aspects. But considering how much standard stuff can be found in books now, I think this is to be expected.

There is however one area that I think deserves more attention, and that is the PD Library. New items appear all the time but we have to guess whether they are worth getting or not. It is no longer the price which deters me but the sheer number of disks I have already acquired.

One particular product that has been neglected is Final Score by Mainstream Music on the MU.150 disk. Here is a simple music-writing program the like of which I have been seeking for years. It is a first rate program, and yet there was not a word about it in ST Applications. It appears to be completely PD - so there will be no updates.

It needs some improvements, and I would gladly pay money for them; is there any chance of getting this product upgraded?

Guy Patterson

K-Spread

Q K-Spread has lots of admirable features: it had drag and drop copying several years before Excel and flying dialogue boxes using a unique distinction between short and long mouse clicks.

I am sure the clipboard is wonderful, but I have never been able to make it work on K-Spread 3 on my STE despite some correspondence some years ago when Kuma still purported to support the programme. It works perfectly well on K-Spread 2 as supplied on a cover disk a year or two back, but version 3 - never. Can anyone help? Maybe Cliff Harker is still out there somewhere; and when are we going to see some development of the program from HiSoft?

Alan Kennedy

Speedo Drivers

John M. Perry - Falcon Forum STA 43

I It was fascinating to hear of someone else having trouble using a Canon Bubblejet. There were times when I didn't know whether to weep in despair over the keyboard or to take a hammer to my Canon BJ 200. In my case the only driver I could get to work initially with AtariWorks and SpeedoGDOS was the Epson FX 80 one. Eventually I found a way to use the BJ driver.

I believe there is a memory problem - difficult to credit I know, if like me you have a 4Mb Falcon.

Once you boot-up the Falcon with Multi-

TOS set the video mode to 2 colours. Don't have any Accessories - use the SpeedoGDOS utilities as *.PRG programs. If you ensure the page size set in the Driver utility agrees with that in the AtariWorks page layout, and the printer dip switch is set to BJ-mode then your BJ driver should work—it did in my case. There are a couple of provisos to this: Firstly, after using the spell-checker the cursed driver problem may reappear if you don't re-boot before printing. Secondly, I have had success when using the A4 page size settings and problems using the others, like US legal.

Good Luck! The print quality of the SpeedoGDOS fonts is wonderful—even worth the hours of effort in trying to get it to work.

I contacted Hisoft about this and they suggest making the BJ printer driver resident, setting the printer to BJ mode and ensuring that the page size in the Speedo driver is the same as that in AtariWorks. I tried this but it didn't work for me and I haven't yet done any more experimenting with this idea of making a printer driver resident.

I haven't tried printing graphics from AtariWorks. However I can wholeheartedly recommend Imagecopy 2. It is excellent. When my BJ 200 printer is set to its non-BJ mode the Epson Inkjet driver (360-dpi) can be used.

I now have just one irritating problem on printing out to an A4 sheet. I don't seem to be able to print out anything on the bottom 28mm of the page. It is puzzling, because AtariWorks sets its automatic page breaks in WP after this point. As a result a couple of lines will not be printed if I forget to set the page breaks myself. Does anyone know why this is?

Colin McIntyre

Classroom Computing

Matthew Townsend - STA 44

I Matthew Townsend's article spurred me to write about our use of Atari computers at NEW College, a sixth form college in Pontefract.

In the Art department we have ten Atari 1040STF computers which we snapped up from the college computing department, who were replacing them with Apple Macs. This was five years ago and the college is now awash with Macs and PCs, but we have so far clung to our trusty STs.

They are used heavily on the GCSE Graphics course with colour monitors and two colour inkjet printers (an Integrex 132 and an Integrex Series 2). We use several art packages including Art Director, Deluxe Paint ST, Spectrum 512, Canvas and Cyber Paint but the simplest to learn and use from the students' point of view is Degas Elite. This package is also used for A level fabric design when the block system is very useful for working out repeat patterns.

We would make more use of Spectrum with its wider range of colours but we cannot get it to print out on the inkjets without converting to Degas which, of course, reduces the colours back to 16.

The apparent incompatibility between the ST and some printers is causing us one or two problems. We decided to do some DTP work in this Art department and we acquired a Spectre GCR Mac emulator and a hard drive with Pagemaker installed. The intention was to do the text and layout in the art studios and just take the disk to the Mac room for printing on the Apple laser.

Sometimes it prints perfectly, but quite often it will not only refuse to print, but refuses to recognise that there is a document on the disk. You can imagine the frustration when a large file goes AWOL. The lack of reliability has meant that the Spectre has been kicked into touch.

We decided, therefore, to be completely independent and do DTP "in house" as it were. We bought Timeworks Publisher 2 and an HP 520 Deskjet. Simple isn't it? No. The 520 will print First Word Plus with no problem but output from Timeworks comes out looking like a cross between Serbo-Croat and Greek, despite the fact that Timeworks has an HP Deskjet driver. IMG and Degas P13 pictures have similar hiero-glyphics all over them. None of the HP dipswitches make an iota of difference and their handbook is written entirely for the benefit of PC users (naturally).

I wrote to the producers of Timeworks and Hewlett Packard asking for advice but neither could be bothered to reply. We think the problem may be to do with the fact that the 520 prints 300 x 600 rather than the usual 300 x 300, but we are not sufficiently technical to really know. We are only artists after all!

Fortunately, we have just one Amiga A600 with Final Copy 2, a word publisher which works on the HP 520 like a dream. Because of the Amiga's Workbench operating system, once a deskjet driver is installed, all Amiga software prints without trouble. If only we have ten Amigas and one Atari!

Nevertheless, we shall persevere. If anyone out there knows of a DTP which is compatible with the HP 520, we would be delighted to hear. I emphasise the 520 because the problem does not seem to arise with the 500 and 510, which are no longer produced.

You might well ask why we don't change to Macs (which are far superior to PCs for our purposes). The reason is cost. Our STs cost us nothing and apart from replacing the occasional power unit and internal drive, they are very reliable and versatile computers. Our computing department dismisses them as yesterday's technology, but the art students find them easy to use and produce some excellent work. With education budgets as they are, I just hope our STs keep going a bit longer.

David Peppiate

Which LZH?

Mark Baines - STA 41
Paul Dion - Forum STA 43

I Firstly, let me reassure Mr Dion that I think more than twice about anything I write in ST Applications or elsewhere. In considering my

remarks about LHARC 1.13 I indeed spent much time verifying my comments which are correct. It is obvious that Mr Dion preferred to read the Table 1 on page 39 of issue 41 without reading the text above it.

The fact of the matter is that LHARC 1.13 should be avoided by all beginners whilst there are faster versions with better compression rates and where all, as a default, use a compression method not compatible with LHARC 1.13. If they encountered a file compressed with the -lh5- method and LHARC 1.13 was all they had, they would be right to complain to me about its ineffectuality and my recommendation.

An aim of Beginners' Forum is to simplify matters and make life easier for my readers. Advocating the use of LHARC 1.13 in this situation would be foolish and counterproductive.

Mark Baines CIX #660

I Regarding the compatibility issue, restricting your de-archiving capability to those files compressed with -lh1- will lock any user out from extracting the vast majority (all?) of the files transferred around the world via the BBS networks. Personally I've long since dumped v1.13 and wouldn't know where to find it again if I wanted to, as would many others, I suspect.

While 'Group Extract' works well from ArcShell v3.1 using the default LZH option (not alternate) the problem of it not supporting LZH above v2.01 for creating archives is as much a failing as the difficulty of including it on a floppy with the archives. While Two-In-One does support the new LZH versions the problem of filesize remains. Even the solution of using the 'make SFX' option in LZHShell v3.10 is inadequate because of the size of the header added to each archive—now 7K.

It seems we are in need of an update to UNLZH172 that at least supports the increased compression of -lh5- if not the speed that current versions afford us.

Harry Sideras CIX #661

I For me, UNLZH is the only reason for sticking with lh1 (LHARC 1.13). Lh5 is faster and more compact and Christian Grunenberg's Lharc 2.2 and above are excellent programmes—and of course now there is the (very large) shell version. But UNLZH is small, fast and easy to use and does everything you need to do with an archive except compressing files. As a registered user I have the ACC version so I can call UNLZH from within programmes to extract files, list archive contents and display text files on screen at any time. The 'Show File' button provides a useful file viewer with routines for searching and printing or saving blocks—not up to VIEW, but good enough. The wildcards enable you to carry out these operations in bulk; on the ST Club disk mag I can read the TXT file and as much of the archived DOC files as I want without leaving UNLZH.

The weak points are that files are extracted with the current date, not that of the original

files, and the lack of support for lh5. I use LHarc 2.3 with the -o switch to produce lh1 archives.

When I registered, I asked John Harris if he intended to revise the program to support lh5; he replied he would like to, as it would be much faster, but did not have the algorithm. Later, courtesy of Christian Grunenberg, I was able to end him some information, but he seems to have gone incommunicado. Has anyone made contact with him recently?

On the subject of self-extracting files, because they are archive files with a bit of executable code up front, it is possible to use ordinary archiving utilities to manipulate them. For example, UNLZH will view or extract SFX files. Replace the *.LZH mask in the file selector with *.TOS or *.* in order to select the archive and ignore the message 'bad header', which results from the executable code. If the archive turns out to be a Zip file UNLZH will report 'no files found' and you can use STZIP to do the job. Now if we could have an UNZIP programme to match UNZLH...

The other trick is to run self-extracting files from an inactive window using the right mouse button; the archive will be extracted to the active window, which can be where you want the files, saving the task of copying the archive across and the disk space it occupies.

Alan Kennedy

PC Peripherals

Q Reading Computer Shopper (which still has its token two pages devoted to Atari matters) I was struck by the proliferation of add ons for the PC which are being advertised. I have no great technical expertise but I know that some equipment (e.g. printers and modems) will work happily with either machine; whereas others (soundcards) are exclusively PC ware. Also advertised were various tape cartridge backup devices which apparently connect to the floppy disk controller for less than £100. Another item was a hard disk that connects to the PC's parallel port (mainly for use with laptops).

Am I being naive to think that these items could be used with ST's if appropriate software existed? I believe that elements of PC compatibility are useful in maintaining the attractiveness of ST's to their users and that software writers and hardware hackers would find these to be new and challenging areas to conquer.

John Stean

● Nice idea, but the big problem with parallel port data storage devices (hard drives, CD ROMs and tape backup units) is that the data transfer rate is appallingly slow. There really is no point in writing software to make these devices work with Atari computers when interfaces like ICD's Link give access to so many high quality fast SCSI devices. Indeed, it's possible that backing up to a tape unit on a parallel port interface could be slower than backing up to floppy disks using a good disk backup program with data compression.

Hardware Modifications

Q Does anyone know how to fit an IDE drive to a Mega 4? SCSI drives are rare and expensive in New Zealand! Ideas to Paul Williamson, 48 Ayr St, Mosgiel, Dunedin, New Zealand.

P N Williamson

I A long time ago (1987-91) I had several Atari STs. The reason I had many different computers was that I was fixing Atari and Memotech computers for a shop in my home town Kristiansand. As payment I got broken STs that I fixed and sold. I did the usual memory and TOS upgrades (Tos 1.4) and I also upgraded hard disks. In February of this year I bought an Atari Falcon, a 4MB ram 64MB HD version.

I have seen in an issue of ST Applications a question about Atari hard disks.

All old SH type can be upgraded to the biggest half height MFM disk you can find, at least 80 MByte. Old MFM disks are not very fast, but they are cheap so it is wise to upgrade. They can only be bought second hand these days as they are no longer being made. Expect to pay about 25 pence per Megabyte.

It is also possible to mount two drives in the SH box. The big Atari controller inside the SH box can control two drives. The Atari software does not recognise two MFM drives so I used a German program. Maybe newer versions of AHDI can be made to work?. You really do need to buy an HD install program (ICD or Hard&Soft). I believe the same goes for Megafile drives.

This Spring I have made a couple of upgrades to my Falcon. Firstly I clock doubled the CPU to 32MHz. I was using a little device called Highspeed 32. But I found that the effect could have been better—the motherboard still ran in 16MHz.

So, the next week I ordered the Highspeed 40 from Germany. This little gadget puts the Motherboard upto 20MHz and the CPU to 40MHz. The only drawback is that the Falcon can not be used with a TV or RGB monitors anymore. It will only work with VGA monitors. Supplied with Highspeed 40 was a diskette with BlowUP 40, a screen expander. My current screen is 896 x 608 in 16 colours.

The speed of my Falcon, with Quick Index 1.5, compared to an ST in percentages:

	16Mhz	32Mhz	40Mhz
CPU-Memory	411	565	724
CPU-Register	406	811	1024
CPU-Divide	507	1014	1268
CPU-shift	1737	3534	4457

Some weeks later I wanted a bigger hard disk. 2.5" IDE drives cost nearly twice as much as 3.5" drives. So now I have a 434MB 3.5" IDE hard disk in a little box outside my Falcon. It takes power from the Falcon; the cable with data and power is via a 25-pin connector in the rear of the Falcon. I put it above the Parallel connector.

My next thing to buy for my Falcon will be a desktop case and a PC keyboard. Things are getting a bit crowded and hot inside the original case. I have mounted cooling ribs on the CPU, but I'm a little worried about the FPU as I can't mount cooling ribs on that as it is placed under the Power Supply.

In May I was asked by a friend of mine if it was possible to make a cheap hard disk for his 1040 STfm. I bought the AT BUS TOS 2.06 CARD made by Hard&Soft in Germany. The instructions were in German but there were no problems fitting it. That card is mounted above the 68000 CPU. I also added the Conner 2.5" drive out of my Falcon. So now he has a 1040 STfm with an internal 64MB hard disk, TOS 1.2 and TOS 2.06. The hard disk only works when TOS 2.06 is activated. With TOS 1.2 the ST cannot find the hard disk. The card can control two IDE drives and the software that came with the card can control the two IDE drives as well as the usual eight acsi and scsi (8) devices.

The card measures around 6x10cm, and the IDE connector is for a 3.5" hard disk flatcable. So I had to solder the 2.5" inch flatcable direct on the card connector. The card also comes in a version for STEs (68000 plcc CPU), and there are versions with and without a clock. The Card cost more than the Link but less than the cost of the Link plus a TOS upgrade. The one I bought cost 174DM including VAT and carriage.

If there is anybody out there who thinks I can help them then they can send me a letter. I'll try to help. But please remember that the computer is only a hobby to me. I'm not a genius; I work at an iron foundry where I make parts for Danish windmills.

Einar Skog
Svalåskjerran 46
N-4645 Nodeland
Norway

TOS 2.06 STFM

Iain Carr - Forum STA 43

I had problems with TOS 2.06 on an STE—programs would crash when trying to read files from write protected disks. In my case the problem was caused by a disk cache in my auto folder, and on removing it (Cold Hard Cache) the problem vanished. Maybe Iain Carr's problem is caused by an auto program?

Andee Graves

SEEK UP

A while ago I purchased the above TOS 2.06 floppy drive fix from you (UT.121) and it has been totally effective in stopping the horrible grinding noises our drive was making immediately after fitting TOS 2.06. As there doesn't seem to have been any compatibility problems whatsoever (so far!) with a range of software, etc., I wonder if it might be an idea to point out to 2.06 users the existence of this

program in your editorial section. Also I wonder if this phenomenon could damage the floppy disk drive(s) in the long term if not fixed as above?

Will Thomson

Speedo Fonts

E G Richards - Forum STA 42

I have SpeedoGDOS. I looked through your catalogue #14 but I couldn't find any suitable fonts or font creation programs. Do you have anything suitable, or is Speedo too wrapped up in licensing?

Pete Jinks

Yes, Bitstream are such a nuisance to deal with that no-one got anywhere with developing fonts and utilities for use with Speedo. Speedo also suffered from the fact that it was used by so few programs.

The first of these problems has been solved by Compo who have taken over the development of the package and have extended it so that it can use PostScript Type 1 fonts. There are thousands of these fonts available in the PD and lots of sources for commercially published fonts.

Whilst DTP packages like Calamus, Time-works and PageStream are unlikely ever to be 'upgraded' to use Speedo, developers of new applications should now see Speedo as the most efficient way of implementing outline font facilities for their application without tying the user into buying collections of fonts that cost more than the original application.

Serial Port Modification

Mark Baines - STA 40

Have I missed something? Why can't the turbocharged output from the 12 stage ripple counter (I remember ice creams like that when I was a lad) be connected to the hole in the motherboard beneath pin 16? Then you could have a single pole switch with the common pin connected to this point and the others connected to pin 16 itself and the ripple counter, saving an additional wire trailing round the inside of the ST.

Alan Kennedy

Programmers' SOS

Dear fellow programmers, I need your help in writing three separate routines in assembler. Although it is really the algorithm that I require the source would obviously save me a lot of time and hassle.

Firstly, I need a routine which will allow me to scroll a screen (a 32K block of data holding either a picture or more likely text) in the method used by the film Starwars. The illusion is that the text is not just running up the screen but is fading into the background, giving a three dimensional perspective of the scrolling. I want to write code in STOS but I am sure it

would be too slow and cumbersome (unless anyone can prove me wrong!). I can however write the code in assembler and call the routine from STOS. Any takers?

Secondly, I would like the source to a clearly written routine which allows me to format discs with extended format options, such as extra tracks and sectors per track.

Finally, in the STOS EXTRA extension I wrote a new command called PPSC, Pixel Perfect Screen Copy. The routine is fairly slow as it takes every bit of every plane within a selected block on the screen and copies that bit to another block of the same size. A facility exists in STOS to do this, called screen copy, but it limits the user to a word boundary for the block. Has anyone an algorithm to allow sections of one screen to be copied to another (in any of the standard three resolutions)? An option would also be required to allow a selection on the number of planes to copy so by selecting only the first plane the whole operation is very fast but only a few colours will be affected. The parameters passed to the routine would be source address, destination address, source start x, source start y, source end x, source end y, destination start x, destination start y and the number of planes. Oh, this is for STOS and as STOS does not use GEM please do not suggest or use any GEM functions. I tried a series of loading bytes and shifting them into a buffer and then eventually placing them into the destination but I just could not get my head around it. One for the very clever people I think!

Any joy you can give me will be greatly appreciated and any resulting code will be fully acknowledged as being yours. I will not profit in any way from using the proposed code so I am afraid I can only credit you in the program, not financially! Good luck.

Martin Cubitt
14 Deepdene Avenue
Rayleigh
Essex SS6 9LG

GFA

Parker - Forum STA 41

I suspect Mr Parker's problem with setting printer margins arise from getting confused between numbers and characters. Instead of
OUT 0,27,ASC("1"),8
he has probably typed
OUT 0,27,ASC("1"),ASC("8")
or something similar using a PRINT statement. The effect would be to set the margin not at 8 characters but at 56, the ASCII code for "8". With two digit numbers the first digit "1" will set the print margin at 49, and the next will be printed.

Alan Kennedy

Speaking Programs

I have the original Fast Basic Speaker program and it worked very well on my old STFM 520. Last year I graduated to an STE and I could no longer get it to work, it simply

crashed. I retrieved my old machine from the loft and there was nothing wrong with the program! I thought it might be the newer version of TOS which caused the trouble but first I studied the original LAUNCH command for the SPEAK.PRG. The command was:

```
IF PEEK($A1)=$FC THEN LAUNCH
"A:\SPEECH.FST\SPEAK.PRG", "S", 0, R%
```

On the old machine the PEEK was indeed \$FC, but on the STE it was \$E0. PEEK(\$A1) appears to be in the region of TRAP#4-11 which are not used. When the command line was changed to:

```
IF PEEK($A1)=$E0 THEN LAUNCH
"SPEAK.PRG", "S", 0, R%
```

then everything was fine on the STE, it could even speak in Latin!

Max M Wirth

Reboot Camp Wanted

Q I recently got a copy of a book called "GFA Basic Training Reboot Camp" from our local library. It is a very good illustration for beginners.

Could you please assist me in finding a source from where this book can be purchased? I have tried the local book shops without success. It is published by MichTron Inc, written by Dorothy Brumleve and Michael Marks, and the ISBN number is 0-944500-02-1

R Bridge

- Michtron products were distributed in the UK by Microdeal, who have now been taken over by HiSoft. It would be worth checking with HiSoft to see if they picked up any old copies of this book from Microdeal. Alternatively try advertising for a secondhand copy in ST Applications and/or Micro Computer Mart. If all else fails, why not just keep on taking the book out of the library?

Redacteur

(Foreign Accents)

David Smith - STA 41

I I don't use Redacteur, but Mortimer Plus has a similar 'dead key' method of producing accented characters, available within other programmes, not just in its own text editor.

Type an acute, grave, or circumflex accent, tilde or umlaut followed by a vowel and the accented character appears on screen. As with Redacteur the problem is that there is no acute accent or umlaut on the keyboard. You can type them using Alternate -186 or -185 on the number pad, but that is rather tedious even if you can remember the numbers. Using Mortimer's own keyboard macro editor to redefine a key doesn't work, but I have solved the problem by redefining a couple of spare keys using Simon Poole's Keyedit. Shifted keys on

the number pad make a good choice. I dug out my demo version of Redacteur to see if this would work but it ignored Keyedit's remapping of the keyboard; evidently Redacteur takes over the keyboard for itself. However, it did not take a moment to use Redacteur's own keyboard function to allocate ' to shift ' and ' to shift ' on the number pad, which did the trick.

Other characters are more difficult; for this purpose the facilities offered by Butler James' EXTKEY function are better; in this case you type the character first then Control-'accent'. This method is much more versatile in that ordinary keys can be used to represent accents—' for ' , the apostrophe for ' , / for Scandinavian ø, etc., and the backspace key can be used to invert ' and '!'. There is a stand alone version of this programme though I have yet to make it work. Unfortunately, Redacteur, like That's Write, ignores this; why do top level word processors have to behave in such a high and mighty way?

Alan Kennedy

Future of TOS

I A few optimistic thoughts about TOS-based computers. I doubt that the actual user base is being significantly eroded. Certainly some of the power users have switched to PCs and Macs but the great majority will not have binned their ST's—they will either continue to run them alongside the new machine or they will have sold them on the second hand market to... possibly a new user who will be as excited by the idea of running one of these computers as I was two years ago (and still am!).

Some new STs are still being sold and it is becoming obvious from a look through the music magazines that the Falcon has established itself firmly in that area at least. "Power without the price" was the Atari slogan a few years ago when it was establishing itself in the market but the truth is that in those days the price was still far too much for many people who couldn't afford a disk drive for a Spectrum or a colour TV. Of course these new users are able to access a large range of secondhand or reduced price software so they have a good start with the machine.

New software applications will have to be good to be attractive to these new users but fortunately many of the serious applications are still improving significantly. The big games developers are trying to follow the money by developing on other platforms, but their Atari wares are obtainable in most car boot sales... and in their original boxes. Actually some of them are quite good value at £3 or £4 each!

The Atari magazines that depend on revenue from games advertisers will just have to hope that the Jaguar is a success but your own publication should continue to be of great use and interest for new generations of enthusiasts. When (if?) Atari manage to reduce the price of the Falcon significantly and give it a push in the market place things could get even more interesting.

John Stean

DB Master One

A Someone somewhere was wanting to know if it is possible to convert this old database format to something more useful. I dare say someone has written a convertor, but I did it using an editor. As it was a one-time job I didn't feel it worth the effort to work out the file format and then develop a translator. This is what I did to produce a quoted comma delimited file:

- 1) Using USEONE, compose a report that will output all the fields (in a useful order) using the one record per page form
- 2) Copy the database file as it is going to be modified.
- 3) Using MAKEONE.PRG, change _ALL_ the first fieldname to "\##\" and all the other fieldnames to "\,\".
- 4) Save this file (the ST 'thinks' for quite a while if it's a large file).
- 5) Back to USEONE and print the report you composed earlier to disk.

Using an editor, which must be able to do 'Find and Replace' on ANY character including carriage returns, line feeds and so on, edit the report just produced. The editor included with Mortimer is ideal.

- 6) Remove all lines that contain the Page number. Unless you have a macro facility, this is very tedious.
- 7) Use Find and Replace to combine split lines. Search for the Hex sequence \$13,\$10,\$20 and replace by \$20 as each split line starts with a space.
- 8) Use Find and Replace to remove all instances of " - ", \$10, and \$13 This leave you with a very long single line of text consisting of your data interspersed with "\##\" and "\,\".
- 9) Replace all "\##\" by \$13 \$10. That is Carriage Return Line feed. This puts each record on its own line.
- 10) If you are sure there are no double quotes in the file, replace all "\" by " (i.e. a double quote). If there are double quotes, change them to some other character.
- 11) Remove the first line (it should be a " on a line of its own).
- 12) Remove the last line (it should be the totals that DB Master produces).

You should now have a file in the correct format. It may need massaging a little to remove multiple spaces.

You can work out the field sizes from MAKEONE which gives the line length, but not, as I recall, the size if the field is more than one line on screen

You should now be in a position to import the file into another application.

Seeing the task in writing looks daunting, but I found the practice much simpler. Obviously you can adjust the final format to your own requirements.

I would have preferred to use a purpose built program, but I've done my files now, so I leave that as an exercise for someone else. Actually, it would be pretty simple to use the report file rather than the original DB Master file. Hmmm.

Chris Lawley CIX #658

DESKTOP DISCUSSIONS

William Hern reviews a useful guide to getting the most out of the word processor module of AtariWorks.

I sincerely hope that the love lives of software reviewers do not resemble their professional work. In a business as fast paced as the computer industry, there usually aren't many opportunities to form long-term relationships with any particular programs. On arrival of a new piece of software, the reviewer will play around with it for perhaps as much as a couple of weeks before having to write an article on it. They'll probably have to immediately cast it aside as by then another software package will have arrived for scrutiny.

As a columnist, I've had my fair share of software 'one night stands' but things have been different since I encountered AtariWorks, the integrated word processor/spreadsheet/database package from Atari (published in the UK by HiSoft). Following my review of the program in the March edition of ST Applications, I have continued to use it and it is now my main word processor.

Our relationship has had its ups and downs but the foundations are strong. The reason that I particularly like AW is that it offers a decent range of features in one convenient, easy to use package. It doesn't attempt to do everything, but what it does, it does well.

My greatest criticism of AW concerns the manual. It has all the hallmarks of a rushed job and doesn't do justice to the software at all. True, it does list the basic functionality of the three modules but it doesn't explain why or how you might want to use each feature. For the new AW user it is very frustrating trying to work

out exactly what the software is capable of. It's like trying to learn a language by using only a dictionary.

For the loyal AW user, there is now help. The book "Papa's Grafik Guide to AtariWorks Word Processor", written by Michael 'Papa' Hebert, offers assistance in mastering the word processor module. The book was prepared entirely using AtariWorks and its professional appearance is fitting testimony to the power and flexibility of the software.

Unlike the official manual, Hebert's book doesn't just list the functions of AW. Although it starts by explaining all the menu options and the screen layout, the rest of the hundred page book is very much a 'how-to' guide. Hebert starts by taking the reader through the creation of a letter, introducing along the way the paragraph formatting and typeface style options.

The letter example is then extended to show how to create form letters which read data from the AW database module and insert it into word processor documents. The book also gives worked examples of producing newsletters, business cards and address labels.

This practical style works very well. Introducing features by showing their use for real-world tasks helps the reader see why a function is useful. It also assists their remembering it as they are using it for a task they can relate to.

Hebert has been a user of AtariWorks ever since it came out and his long experience shows in the number of hints and tips on how to work smarter and faster

that are scattered throughout the pages. I was particularly impressed by the ingenious advice given on how to create large dropped capitals for use in opening paragraphs.

Particularly interesting are the mentions of the undocumented features within the package, most of which revolve around the copy operation. For example, holding down either of the shift keys while selecting the copy menu item allows the text to be copied into one of ten buffers.

The most useful undocumented copy feature in my opinion is activated by holding down the Alternate key at the same time as this copies the selected text into the clipboard as a GEM graphic image. In this form the text can have all sorts of special effects applied to it, making for more attractive documents. It also provides one way of creating multi-column documents.

Of course these features are undocumented for a reason, most probably because they haven't been completely debugged so Hebert wisely warns that documents should be saved before invoking them. However they are extremely useful and it would be

a shame not to use them at all.

Unfortunately Hebert's book cannot be regarded as a complete guide to AtariWorks. The database module is only briefly mentioned and the spreadsheet is completely ignored. Hebert has instead chosen to concentrate on the word processor which, after all, is the module that the majority of AW owners use the most anyway. Hebert is working on a revised edition of the book that explains the database and spreadsheet as well, but it is unlikely to be ready this year.

In summary, "Papa's Grafik Guide to AtariWorks Word Processor" is an excellent publication. Anyone who reads this book cover to cover and works through the examples will by the end have an extensive knowledge of how to use the AW word processor for a wide variety of tasks.

Currently the book is only available direct from the author in the US, although there are tentative plans for it to be published in the UK as well. For those who don't want to wait, the guide costs US \$16.95 and can be bought by writing to Michael Hebert at 1228 North School Street, Honolulu, HI 96817, United States of America.

Learning from Papa

Falcon FacTT-File

I'd like to mention the latest addition to the FFF team. John Ridge from Saint Albans joins Colin Fisher-McAllum, Kevin Beardsworth and Roger Derry. John is a TT owner and so will be offering TT expertise and assistance. Welcome aboard John!

For those who haven't heard of the Falcon FacTT-File before, the FFF offers a free database of TT and Falcon owners which users can make use of to find others with similar computing interests. Registration forms can be obtained by writing to the FFF at 11 Pound Meadow, The Green, Whitchurch, Hants RG28 7LG, England and enclosing a stamped addressed envelope. Fill the form in and return it along with a floppy disk and another SAE to the same address. The disk will be returned with the register on it and as much quality PD software as possible. As I've said many times before, it's a great way for Falcon and TT owners to make contact with others.

Programmers' Forum

In this month's edition of ST Applications' regular programming column, we begin an exploration of XControl, Atari's extensible control panel.

XControl and CPXs

In the beginning, the ST's Desk menu had enough space for six desk accessories, and that was the limit. Of course, it did not take long before this got a little restrictive, as more wonderful accessories appeared. To get around this problem, programs such as Chameleon and MultiDesk were used to allow lots of desk accessories to share one menu entry. Despite occasional compatibility problems, these worked rather well. More recently though, Atari themselves produced their own answer to the demand for more and more accessories: XControl (Figure 1).

XControl adopts a different approach to the third-party programs: rather than trying to shoehorn standard accessories into some manager, it acts as a host for specially-written modules, or CPXs. In return for 50K of memory, XControl provides all the GEM start-up code and a variety of service routines. As a result, CPXs can be very small, which is good news for those of us without megabytes to burn. Even better, the majority of the CPX code is only loaded when required, so saving even more memory.

The only problem with CPXs is that information on how to write them has been rather difficult to come by. However, this situation is beginning to improve: The Atari Compendium and the Lattice C documentation both include material on CPXs and XControl. To illustrate how to use this information, we will develop two useful CPXs over the course of this issue and the next. Of course, in the best traditions of the column, we will feature complete source code to learn from and modify.

Introduction to CPX programming

The key thing to remember about CPXs is that they are extensions of XControl, and not programs in their own right. This means that CPXs have to follow the rules that XControl lays down. As a result, CPXs have some unusual data structures and odd protocols to adhere to.

These make programming in high-level languages difficult unless the development system explicitly supports CPXs. Lattice C v5.60 includes such features and tools to make the job easier, and it is this that we will use in this

article. Assembly language is another option, and probably the best bet for non-Lattice users. Once familiar with the quirks of CPX programming, it may be possible to write adapting code to interface between XControl and other development systems.

How XControl works

CPXs have an unusual structure which reflects the demands put upon it by XControl (Box 1). To understand why the CPX is thus, we should start by looking at how XControl works. XCONTROL.ACC is loaded just like all normal desk accessories during the Desktop boot. During its start-up, it searches for CPX modules in the directory specified in the configuration file CONTROL.INF. A small portion of each CPX is loaded, sufficient to fill in the scrolling list of CPX modules. This block, the 512-byte CPX prefix, is kept in memory permanently (in the majority of cases).

Some CPXs need to be invoked during XControl's start-up, in order to allow them to configure the system prior to the Desktop appearing. These modules bear a flag that causes XControl to load and execute them as part of the start-up. One at a time, these modules are loaded, invoked and then (usually) unloaded from memory. This concludes XControl's initialisation.

At this point, XControl appears to go to sleep until activated by the user. Additionally, appropriately-written CPXs can be woken by the system timer or other events. When its entry is selected from the Desk menu, XControl displays a scrolling list of CPXs available for loading. When the user double-clicks on a CPX from the list, XControl allocates memory for the module, loads it, and hands over control to the module code. When the work is done, the module is unloaded, and its memory freed.

Although most behave as described above, there are differences between CPXs. The treatment of a module depends both on its structure and on some configuration flags (see Box 2).

How CPXs work

As part of its role in hosting a CPX, XControl participates in a conversation with the module. The conversation begins when the module is

executed. This will occur when the user selects the CPX, or (for BOOTINIT CPXs) during XControl's boot phase. XControl begins by jumping to the first location in the module's TEXT segment. For Lattice CPXs, this is occupied by the start-up code in the stub CCPX.O (see later).

The stub code refers control to the CPX proper by calling a function named `cp_x_init()`. All CPXs must have a function called `cp_x_init()`, just as all normal C programs must have a `main()` (CPXs do not need a `main()`). As an argument to `cp_x_init()`, XControl provides a pointer to a structure, the XControl Parameter Block (XCPB), that contains all the information that the CPX needs to function. This ranges from a copy of XControl's VDI handle to a list of pointers to service functions supplied by XControl.

In return, the CPX provides XControl with a list of entry points within the module that XControl can use under various circumstances. For example, one of these entry points is used by XControl when the user double clicks on the module's entry in the CPX list. Further details on this block (the CPXINFO structure) and on the XCPB are provided in Box 3.

The example

Armed with this information, let's turn to the example CPX in Listing 1. The purpose of this CPX is to give access to important version number information on the various components of TOS. These include the overall TOS version number, and that of the GEMDOS and the AES. For good measure, the CPX also shows the size of the largest block of free memory in the system. Nothing earth-shaking, but it serves to illustrate the basics of CPX programming.

The source #includes the header file `cp_x.h` which contains type declarations for the various CPX-specific structures. After the #includes comes the resource information. CPXs cannot use the `rsrc_load()` function, so their resource data must be embedded. We will return to this topic in the second part of this article.

The module consists of three functions. Two of these, `cp_x_init()` and `cp_x_call()` are entry points for XControl, whereas the third, `configure_box()`, is local to the module. `configure_box()` simply acquires the version data and updates the dialogue box accordingly. Since such code is likely to be familiar to most GEM programmers, nothing more will be said, except to point out that the ROM header block is read in supervisor mode as the pointer is held in the protected area of low memory.

Returning to the top of the listing, `cp_x_init()` receives the pointer to XControl's XCPB and stores it in a global variable to allow the whole module access to XControl service functions. `appl_init()` is then used to initialise the AES interface code.

`cp_x_init()` can be called at two separate stages in the XControl lifecycle: on boot-up, and on user activation. To complicate the matter, XControl requires different information to be returned on the two occasions. Fortunately, it provides a field in the XCPB structure that indicates the time of the call: `xcpb->booting` is TRUE for calls during XControl booting.

For calls made during the boot phase (to CPXs with either the BOOTINIT or SETONLY flags set), `cp_x_init()` should return either TRUE (1), indicating that it wishes to receive subsequent requests to activate, or FALSE (0) to cease contact with XControl. In general, BOOTINIT CPXs will return TRUE, and SETONLY CPXs, FALSE.

If `xcpb->booting` is FALSE, the call to `cp_x_init()` is as a result of the user activating the module's entry in the scroll list. On such occasions, `cp_x_init()` should return a pointer to the CPX's CPXINFO structure. This allows XControl to manage the user interaction using the module's entry points. As a form CPX, the example program only supports the `cp_x_call` entry point, so the remaining fields in the CPXINFO are set to NULL.

When the user activates a form CPX,

XControl first calls `cpx_init()` as described above, and then invokes the function pointed to by the `'cpx_call'` member of the `CPXINFO` structure. This function receives a pointer to an array of four short ints representing the position and size of the XControl workspace (a `GRECT` structure). This information is used to position the object tree of the CPX within XControl's window, and then to draw the dialogue box.

To animate the program's dialogue box, `cpx_init()` uses one of XControl's service functions: `Xform_do()`. This is an extended version of the `form_do()` call. The arguments are a pointer to the object tree, the index of the first editable object, and a pointer to an 8 word message buffer that is used to pass information above and beyond that normally returned from a `form_do()`-type interaction.

`Xform_do()` returns the index of the button clicked on by the user to terminate the interaction (with bit 15 set for double-clicked `TOUCHEXITs`, as usual). If the index is -1, then there is a message to be read from the message pipe. Be careful not to mask off bit 15 of the button word before testing for the -1 value, otherwise the pipe analysis code will never be executed! The code tests for two of the possible messages that may appear in the pipe (others

may be sent, but are not relevant to this CPX): `AC_CLOSE` (XControl is being terminated) and `WM_CLOSED` (the user has clicked on the `CLOSER` box). Both of these end the interaction, though it is conventional to treat the former as a 'Cancel' action, and the latter as an 'OK'. Since this CPX does nothing more than display its dialogue box, the two messages are treated as being equivalent.

When the interaction is over, `cpx_call()` returns a value of 0 to XControl to indicate that the job is done. And that's all there is to it!

Doing it

Having looked at most of the basic theory needed to produce a CPX, what about the practicalities? Getting our example CPX running is simple, as some of the preparatory work has already been done. Once the three listings are on disk with the appropriate filenames, start by compiling `INFO.C`. To create code compatible with the CPX environment, various compiler options must be set before compilation.

First, XControl expects function arguments to occupy the minimum space on the stack. For example, a short int should occupy 16 bits, and a long int 32 bits. The default behaviour of Lattice C is to extend shorts to 32 bits before

stacking, so this has to be disabled by setting the `-aw` flag for phase 1 of the compiler.

Secondly, two changes are made to the code generation phase to cope with the calling of Lattice functions by XControl. Stack checking is disabled (`-v`) to prevent any problems created by Lattice C functions being called from XControl's context. Also, the near data base register `a4` is reloaded at the start of each function (`-y`).

Once `INFO.C` has been compiled under these conditions, a CPX prefix block should be created using the `CPXBUILD` tool. This requires a long list of command line arguments which should be as follows:

```
cpxbuild -b -c1 -d'TOSV' -iE:\INFO.ICN -
nVERSIONS '-tTOS INFORMATION' -p1 -v1.0
E:\INFO.HDR
```

(Obviously, if the program is being run from the Desktop, the text `'cpxbuild'` should be omitted.) The output from `CPXBUILD` should be a 512 byte file called `INFO.HDR` which contains the CPX prefix. The CPX icon specified by Listing 2 (`INFO.ICN`) is incorporated into the prefix block.

To weld all the pieces together, Listing 3 provides a linker control file that produces a complete CPX. The file will require editing to fit the structure of your development set-up. The `'prefix'` command instructs the linker to copy the `INFO.HDR` file into the output file prior to any of the normal components, including the GEMDOS executable program header. Note that the linker control file specifies the use of the `CCPX.O` startup stub as opposed to the normal `C.O` file. This startup contains code to set up a minimal Lattice environment; features such as command-line parsing which are inappropriate in the CPX environment are omitted.

Once the files have been linked, and the file `INFO.CPX` produced in the CPX directory, either reboot, or instruct XControl to reload the CPXs. The TOS Information CPX should now appear in the list (Figure 2), and double-clicking should reveal the desired information (Figure 3).

Constraints

The XControl environment imposes several restrictions on CPXs:

- The usable screen area is 256 by 176 pixels. All dialogues must fit within this space. Note that this small workspace allows XControl to fit onto an ST low resolution display.
- XControl is a desk accessory—all the restrictions that apply to desk accessories must definitely apply to CPX modules. This includes non-use of `Pexec()`, difficulties with `Malloc()` and so on.
- CPXs must not call `rsrc_load()`. As a consequence, their resource data must be embedded within the file. More about CPXs and resource data in the next column.
- CPX execution takes place in the XControl's context, with extremely limited stack space (only 2K). Accordingly, large automatic arrays, recursive function calls and the like must be avoided.
- CPXs should not install vector handlers. Such low-level hackery should be done by an AUTO folder program which is configured by a CPX. To make the connection between the two programs, the AUTO folder program should install an entry in the cookie jar for the CPX to retrieve later. `NVDI` and its controlling CPX are a perfect model of this strategy.

As a result of these restrictions, CPXs are only suitable for certain kinds of tasks, such as controlling hardware features and AUTO folder enhancements like printer buffers. They are not designed to cope with the requirements of major applications.

Box 1 - Anatomy of a CPX

The CPX module has a structure similar to the standard GEMDOS executable program format, but with an extra element: the CPX prefix. This consists of a 512 byte block which contains the information required by XControl to construct the module's entry in the CPX list, along with various flags that tell XControl how to treat the module. The CPX prefix occupies the first 512 bytes of the CPX file. It is followed by the standard GEMDOS 28-byte header, and then the normal text, data and fixup information.

The format of the CPX prefix can be represented by the following C structure (short is 16 bits, long is 32 bits):

```
typedef struct {
    unsigned short cpx_magic;
    unsigned short cpx_flags;
    unsigned long cpx_id;
    unsigned short cpx_version;
    char cpx_icon_text[14];
    unsigned short cpx_icon[48];
    unsigned short cpx_icon_colour;
    char cpx_title_text[18];
    unsigned short cpx_title_colour;
    char cpx_buffer[64];
    char cpx_reserved[386];
} CPXHEAD;
```

'`cpx_magic`' is a magic number that verifies the block as a CPX header. It always has the value 100 (0x40). The '`cpx_flags`' field provides information about how the module should be executed. See Box 2 for more details.

'`cpx_id`' is a longword that provides an identifier for the module. It is usually set by the programmer to four ASCII characters that indicate something about the purpose of the CPX. For example, a CPX that controls a network driver might call itself 'LAND'. This field is important, as XControl will not load two CPXs with the same `cpx_id` value, even though their filenames may be different.

'`cpx_version`' indicates the version number of the module. It is formatted such that the high byte of the word represents the major revision number, with the minor number in the low byte. For example, version 2.51 of a CPX would have a `cpx_version` of 0x0251.

The next three fields control the appearance of the icon that represents the CPX in the XControl module list. '`cpx_icon_text`' is a null-terminated string containing the icon title. The icon shape is a 32 by 24 pixel bit image held as an array of 48 short words: '`cpx_icon`'. The colour of the icon is controlled by '`cpx_icon_colour`', which takes values between 0 and 15, relating to the standard AES 16-entry palette.

'`cpx_title_text`' and '`cpx_title_colour`' dictate the text that appears in the module list. Note that most CPXs have their titles printed in black: use of other colours may make the list look untidy.

Finally, '`cpx_buffer`' is a workspace area for the module (more details in the next article). '`cpx_reserved`' is reserved by Atari for future developments.

Box 2 - Flavours of CPX

CPXs come in two main flavours—event CPXs and form CPXs. The former have detailed control over the interaction with the user, whereas the latter operate via an extended `form_do()` interface. Form CPXs are somewhat easier to program, in that there are fewer interactions between the CPX and XControl. Form CPXs should be suitable for most purposes: both examples presented in this mini-series are of this variety.

In addition to this distinction at the coding level, XControl can treat CPXs in different ways depending on the state of various flags in their prefix block. Bit 0 of the `cpx_flags` word represents the `SETONLY` flag. CPXs with this bit set are only invoked once, during the XControl's boot phase. They do not subsequently appear in the list of selectable CPXs, and their prefix blocks are not retained in memory. Set-only modules can be used to perform tasks that need to be performed only once in a session.

Bit 1 of `cpx_flags` is set in CPXs that should not only be called during XControl's boot phase, but should also be accessible subsequently. `BOOTINIT` CPXs include those that configure hardware prior to the appearance of the Desktop.

The final header flag, `RESIDENT` (bit 2) identifies those CPXs which should be loaded by XControl during the boot phase and remain in memory throughout a session. Since this means that they occupy memory even when not in use, this flag should only be used when absolutely necessary.

All other bits of the `cpx_flags` word are reserved, and should be set to 0.

Next Month

Next month we will continue with our exploration of XControl by looking at a more complex practical example of particular relevance to Falcon and MegaSTE owners and investigate more advanced aspects of CPX programming.

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

One last point, about email. Whilst I am very happy to receive contributions by email, please include your real name in the message, as cryptic alphanumeric user identifiers are not terribly useful. Please send a disk or email if there are large chunks of text or ASCII source code: I have no time to retype lots of material. Naturally, disks will be returned if an SAE is included.

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Box 3 - Communication

Communications between XControl and its CPXs are mediated via two structures: the XControl Parameter Block (XCPB) and the CPX Information block (CPXINFO). These are defined in the `cpx.h` header file.

The XCPB structure

```
typedef struct {
    short handle;
    short booting;
    short version;
    short SkipRshFix;
    char *reserve1;
    char *reserve2;
    void (*rsh_fix)();
    void (*rsh_obfix)();
    short (*Popup)();
    void (*s1_size)();
    void (*s1_x)();
    void (*s1_y)();
    void (*s1_arrow)();
    void (*s1_dragx)();
    void (*s1_dragy)();
    short (*Xform_do)();
    GRECT (*GetFirstRect)();
    GRECT (*GetNextRect)();
    void (*Set_Event_Mask)();
    short (*XGen_Alert)();
    short (*CPX_Save)();
    void (*Get_Buffer)();
    short (*getcookie)();
    short Country_Code;
    void (*MFsave)();
} XCPB;
```

This structure contains various items of information about the XControl environment and a list of pointers to routines within XControl that a CPX can exploit. 'handle' contains the VDI physical workstation handle used by the AES (ie the value returned by `graf_handle()`). This is needed by any CPX that opens a VDI virtual workstation. 'booting' is set to `TRUE` during XControl's initialisation phase. The latest version of XControl is v1.31: this is indicated in the XCPB by a 'version' field of \$0131.

'SkipRshFix', 'rsh_fix' and 'rsh_obfix' are concerned with the process of fixing up CPX resource data prior to use. This subject will be touched on in the next column, but CPX programmers using Lattice C should not have to worry about these fields. 'reserve1' and 'reserve2' are reserved for future expansion. 'Country_Code' indicates the nationality of XControl using the same code as for TOS ROMs.

The remaining fields are all function pointers for useful XControl service routines. For now, only brief sketches of purpose of each service function will be given - more details on selected ones

will be provided later. In addition to providing a `form_do()` like interface for CPXs ('Xform_do'), XControl also supplies utility functions to manage commonly-used dialogue box elements: 'S1-size', 'S1_x', 'S1_y', 'S1_arrow', 'S1_dragx' and 'S1_dragy' are used to animate horizontal and vertical scroll bars; 'Popup' provides pop-up menus in dialogue boxes.

Although XControl normally manages window redrawing on its own, CPXs that use non-standard AES objects are required to participate in this process using the 'GetFirstRect' and 'GetNextRect' functions. 'Set_Event_Mask' is used by event CPXs to determine what type of events should trigger them. 'MFsave' allows CPXs to change the mouse pointer shape without interfering with other applications.

Finally, 'XGen_Alert' displays one of a small choice of alert boxes; 'CPX_Save' allows a CPX to save configuration data; 'Get_Buffer' gives access to a workspace area and 'getcookie' scans the cookie jar for a particular cookie.

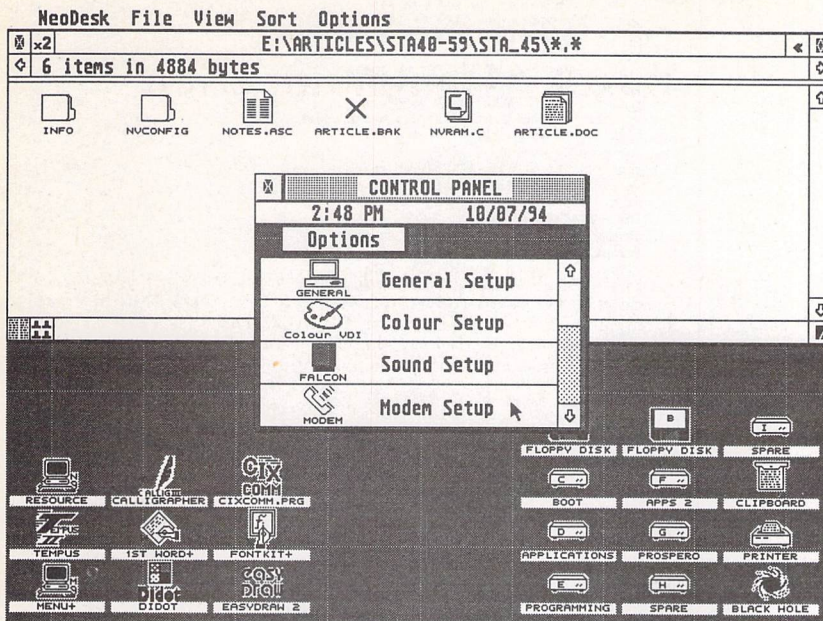
The CPXINFO block

In return for the huge list of data supplied by XControl, the CPX returns a pointer to a structure listing its entry points. Unused fields are set to `NULL` to indicate that the module does not have an appropriate entry point.

```
typedef struct {
    short (*cpx_call)();
    void (*cpx_draw)();
    void (*cpx_move)();
    void (*cpx_timer)();
    void (*cpx_key)();
    void (*cpx_button)();
    void (*cpx_m1)();
    void (*cpx_m2)();
    short (*cpx_hook)();
    void (*cpx_close)();
} CPXINFO;
```

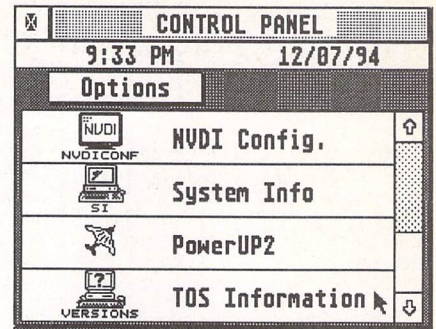
All CPXs should have a 'cpx_call' function; the remaining fields are only needed by event CPXs. When the user activates a CPX, 'cpx_call' is invoked immediately after the `cpx_init()` function. This is where the CPX should display its dialogue box, interact with the user, and so on.

The 'cpx_draw' entry point is used when an event CPX should redraw its display. 'cpx_move' handles window move events, 'cpx_close' is called when the accessory is closed either by the system or by the user. The remaining fields are used by event CPXs to set up handlers for timer, mouse or keyboard events, as required. 'cpx_hook' provides a low-level interception point for event handling, allowing total control over XControl's response.



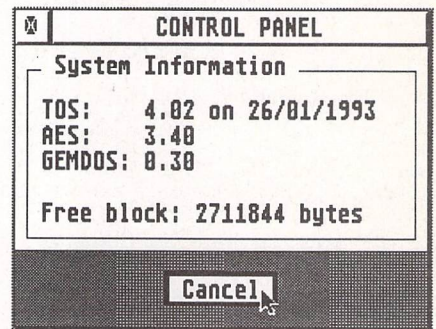
△ Figure 1

Atari's XControl program allows any number of control panel-like modules to be loaded when needed.



△ Figure 2

Our new CPX's entry in the module list. Double-clicking here... ..produces the answer! ▽ (Figure3)



Listing 1

```

/*
** Programmers' Forum STA 45 (September 1994)
** First CPX that displays various useful versions of the components of TOS.
**
** Filename: INFO.C
** Compiler system: Lattice C v5.60
** Phase 1 options: -cargfku -aw
**   Meaning: Enable ANSI mode, disable trigraphs, enable
**             non-ANSI keywords, assume unsigned chars,
**             type-based stack alignment
** Phase 2 options: -ms -v -y
**   Meaning: Optimise for space, disable stack checking,
**             force reload of a4 on function entry
** Link using supplied link file.
** Written on 6 July 1994
*/

#include <aes.h>
#include <cpx.h>
#include <dos.h>
#include <osbind.h>
#include <portab.h>
#include <stdio.h>

/*
** Resource information...
*/

#define VIDPANEL 1
#define CANCEL 2
#define TOSVER 9
#define AESVER 10
#define GEMDSVER 11
#define DATE 12
#define FREEBLOK 14

static TEDINFO rs tedinfo[] = {" System Information ", "", "",
    IBM, 6, TE_LEFT, 0x1180, 0, -1, 21, 1};

OBJECT PANEL[] = {
/*0*/  {-1,1,3,G_BOX,0x0,0x0,(void *)0xff1101,8,16,256,176),
/*1*/  {3,2,2,G_BOX,0x0,0x0,(void *)0xff1141,0,128,256,48),
/*2*/  {1,-1,-1,G_BUTTON,0x7,0x0,"Cancel", 96,16,64,16},
/*3*/  {0,4,15,G_BOX,0x0,0x0,(void *)0xff1101,0,0,256,128),
/*4*/  {15,5,14,G_BOX,0x0,0x0,(void *)0xff1101,8,16,240,104),
/*5*/  {6,-1,-1,G_STRING,0x0,0x0,"TOS:", 8,16,32,16),
/*6*/  {7,-1,-1,G_STRING,0x0,0x0,"AES:", 8,32,32,16),
/*7*/  {8,-1,-1,G_STRING,0x0,0x0,"GEMDOS:", 8,48,56,16),
/*8*/  {9,-1,-1,G_STRING,0x0,0x0,"Free block:", 8,80,88,16),
/*9*/  {10,-1,-1,G_STRING,0x0,0x0," 0.00", 64,16,40,16),
/*10*/ {11,-1,-1,G_STRING,0x0,0x0," 0.00", 64,32,40,16),
/*11*/ {12,-1,-1,G_STRING,0x0,0x0," 0.00", 64,48,40,16),
/*12*/ {13,-1,-1,G_STRING,0x0,0x0,"01/01/1994", 136,16,80,16),
/*13*/ {14,-1,-1,G_STRING,0x0,0x0,"on", 112,16,16,16),
/*14*/ {4,-1,-1,G_STRING,0x0,0x0,"00000000 bytes", 104,80,112,16),
/*15*/ {3,-1,-1,G_TEXT,0x20,0x0,&rs_tedinfo[0],16,0,160,24),
};
    
```

```

/*
** Prototype the externally visible CPX functions...
*/

CPXINFO *cpx_init(XCPB *);
short cpx_call(GRECT *);

/*
** Prototype the internal functions...
*/

void configure_box(void);

/*
** Global variables...
*/

XCPB *xcpb; /* XCPB passed to CPX by XControl */
CPXINFO jump_table = /* List of CPX functions supported */
    {cpx_call,NULL,NULL,NULL,NULL,NULL,NULL,NULL};

OBJECT *box; /* Main display object tree */
OSHEADER **sysbase = (OSHEADER **)0x04F2; /* Pointer to OS header block */

/*
** Main entry point for all CPXs. It is called in two
** phases. First, during the boot phase; when the
** CPX should set up its default values, and initialise
** the hardware it controls. Secondly, if the user
** activates the CPX; when the CPXINFO structure should
** be filled in, and the current hardware values copied
** into the resource for manipulation. The function
** is passed a pointer to an XControl parameter block.
** The return value depends on the execution phase. After
** the phase 1 call, the function should return TRUE if
** any further events should be dispatched to the CPX, or
** NULL if the CPX is not to be further accessed. After
** phase 2, the return is always a pointer to the
** CPX's own list of vector handlers.
**
** Usage: table = cpx_init(service_list);
**
** CPXINFO *cpx_init(XCPB *);
*/

CPXINFO *cpx_init(in_xcpb)

XCPB *in_xcpb;

{
    xcpb = in_xcpb;
    appl_init();
    box = #PANEL[0];
    configure_box();
    if (xcpb->booting == TRUE)
        return((CPXINFO *)TRUE);
    return(&jump_table);
}

/*
** The cpx call() function, which is the only required
** XControl interface for form CPXs. This is called when
** the user activates the CPX, after the phase 2 call
    
```

```

** to cpx init(). The argument is a pointer to a GRECT
** which describes the work area of the XControl window.
** The function sets up its variables for a user interaction,
** calls the XControl Xform do() service routine to handle
** the interaction, acts accordingly, and then returns.
** The return code is TRUE if the CPX is to continue
** receiving event messages (only needed by event CPXs).
** Form CPXs should return FALSE, whereupon XControl will
** reinstate the CPX list.

```

```

** Usage:   action = cpx_call(workspace);
**         short cpx_call(GRECT *);
*/

```

```
short cpx_call(workspace)
```

```
GRECT *workspace;
```

```

{
  short button;
  short dx, dy, dw, dh;
  short pipe[8];

  (box+ROOT)->ob_x = workspace->g_x;
  (box+ROOT)->ob_y = workspace->g_y;
  wind_get(0, WF_WORKXYWH, &dx, &dy, &dw, &dh);
  objc_draw(box, ROOT, MAX_DEPTH, dx, dy, dw, dh);
  while (TRUE)
  {
    button = (*xcpb->Xform_do)(box, 0, pipe);
    if ((button & 0x7FFF) == CANCEL)
    {
      (box+CANCEL)->ob_state &= ~SELECTED;
      break;
    }
    else if (button == -1)
    {
      if (pipe[0] == AC_CLOSE || pipe[0] == WM_CLOSED)
        break;
    }
  }
  return(FALSE);
}

```

```

/* Function to read the data to be displayed
/* from the system and format it for displaying
/* in the CPX. There are no arguments and no returns.
** Usage:   void configure_box(void);
*/

```

```
void configure_box(void)
```

```

{
  int high, low, day, month, year;
  unsigned long block;
  char *text;
  OSHEADER *rom_header;
  void *oldSSP;

  oldSSP = Super(0L);
  rom_header = (OSHEADER *) (* sysbase);
  high = (rom_header->os_version >> 8) & 0xFF;

```

```

low = rom_header->os_version & 0xFF;
month = rom_header->os_date >> 24;
day = (rom_header->os_date >> 16) & 0xFF;
year = rom_header->os_date & 0xFFFF;
Super(oldSSP);
text = (char *) PANEL[TOSVER].ob_spec;
sprintf(text, "%2d.%02d", high, low);
text = (char *) PANEL[DATE].ob_spec;
sprintf(text, "%02X/%02X/%X", day, month, year);
high = (AESGlobal[0] >> 8) & 0xFF;
low = AESGlobal[0] & 0xFF;
text = (char *) PANEL[AESVER].ob_spec;
sprintf(text, "%2X.%02X", high, low);
high = Sversion() & 0xFF;
low = Sversion() >> 8;
text = (char *) PANEL[GEMDSVER].ob_spec;
sprintf(text, "%2X.%02X", high, low);
block = (unsigned long) Malloc(-1L);
text = (char *) PANEL[FREEBLOK].ob_spec;
sprintf(text, "%u bytes", block);
}

```

Listing 2

```

/*
** Programmers' Forum STA 45 (September 1994)
**
** Icon for first CPX. This is a modification of
** an .ICN file created by DERCS. Do not compile
** this file, simply save it for subsequent
** processing by DERCS.
**
** Filename: INFO.ICN
** Written on 6 July 1994
*/

```

```

static short BBDATA0[] = {
0x01FF, 0xFF00, 0x0300, 0x0180,
0x02E7, 0x9E80, 0x028F, 0xC280,
0x0288, 0xC280, 0x0281, 0xC280,
0x0283, 0x8280, 0x0283, 0x0280,
0x0280, 0x0280, 0x0283, 0x0280,
0x02FB, 0x7E80, 0x0300, 0x0180,
0x01FF, 0xFF00, 0x0080, 0x0200,
0x01FF, 0xFF00, 0x0200, 0x0080,
0x0EE0, 0x7E9C, 0x1200, 0x00A2,
0x09FF, 0xFF92, 0x3FFF, 0xFFFE,
0x5000, 0x0012, 0x2555, 0x52AA,
0x2AAA, 0xA954, 0x7FFF, 0xFFFC,
};

```

Listing 3

```

Prefix E:INFO.HDR
from
E:\SYSTEM\LIBRARY\CCPX.O
E:INFO.O

library
E:\SYSTEM\LIBRARY\LC.LIB
E:\SYSTEM\LIBRARY\LCG.LIB

to
C:\CPX\INFO.CPX

```

X-Debug

Advanced Debugger for Atari ST/TT computers

X-Debug is an advanced debugger for the Atari range of computers. It is both a low-level debugger, showing memory dumps and register contents, and also a medium-level debugger, understanding about certain high-level languages and allowing source display single-step, and local variable access, for example.

The best support is for Lattice C, as that is the only compiled language that outputs full debug information, but it also supports line-number debug (as created by HiSoft Basic and Devpac 3), and symbol-only debug (usable with virtually all ST compilers).

Crucial to the whole debugger is the X-Debug language. This is a simple yet powerful script type language that allows complex operations to be built up from a sequence of standard operations. It supports a full expression evaluator, aliases, and procedures with parameters. It is also an important factor in customising the user interface, allowing specific commands to be attached to particular keypresses.

X-Debug runs on STs and TTs with any monitor type. One megabyte of RAM is recommended, and TOS 1.4 or later avoids problems with larger programs. Written by Andy Pennell, the creator of MonST.

£24.95

FaST Club
7 Musters Road
Nottingham
NG2 7PP

CPU Registers		Disassembly PC	
00:00000000	A0:00000000	e00030>	move.w #52768, sr
01:00000000	A1:00000000	e00034	reset
02:00000000	A2:00000000	e00036	cmpl.l #5fa52235f, 5fa0000
03:00000000	A3:00000000	e00040	bne.s %e00040
04:00000000	A4:00000000	e00042	lea %e0004c(pc), a6
05:00000000	A5:00000000	e00046	jmp 5fa0004
06:00000000	A6:00000000	e0004c	move.l #5000, d0
07:00000000	A7:00000000	e00052	movec d0, cacr
SR:0000	U1A xnzvc	e00056	moveq #0, d0
PC:00E00030	A7:00000000	e00058	movec d0, vbr
move.w #52768, sr		e0005c	move.l %e0004c, t0
#2768		e00064	move.l %e0004c, t0
		e0006c	move.l %e0004c, t0
00000000	002E 0301 \00	e00074	btsq %e0004c, t0
00000004	00E0 0010 s p	e0007a	bne.s %e00040
00000008	0100 131E %03'	e0007c	lea %e0004c(pc), a6
0000000C	0100 11C4 %01	e00080	bra %e0007e
00000010	0100 11C4 %01	e00084	bne.s %e00080
00000014	0100 11C4 %01	e00086	move.b %e00080, 5424.w, 5ffff000L.w

MonST-Debug 1.00 by Andy Pennell

MonST-emulation script installed OK

CPU Registers		Mon.c	
00:0100131E	A0:00000000	1282:	
01:01000578	A1:00000000	1283:	/* zoom (or unzoom) a window */
02:000000FF	A2:010E2110	1284:	word zoom_window(word num)
03:FFFFFFE4	A3:010F5E50	1285:	{
04:00000000	A4:01117654	1286:	word rx, ry, rw, rh;
05:00000000	A5:011138E6	1287:	struct ms %mptr;
06:00000000	A6:01119750	1288:	word err;
07:00000001	A7:01119650	1289:	word w;
SR:2394	SIX xnzvc	1290:	
PC:010E009E	A7:01117844	1291:	mptr=list[num];
jmp -init_diss		1292:	if (mptr->type!=MTYPE_DEAD)
510170e 41f8 f92		1293:	return 0; /* cannot zo
		1294:	if (mptr->zoomed!=FALSE)
00000000	002E 0301 \00	1295:	{
00000004	010F 0260 %01	1296:	mptr->ox*mptr->w; mptr->oy*mptr->
00000008	010F 0206 %01	1297:	mptr->oh*mptr->h; mptr->oh*mptr->
0000000C	010F 0206 %01	1298:	
00000010	010F 0206 %01	1299:	w*max;
00000014	010F 0206 %01	1300:	if (mptr->type!=MTYPE_MENU)

Trace at PC=010E009E

Trace at PC=010E009E

For Sale

HiSoft C Interpreter £15, War in the Gulf £15, Reach for the Skies £15, Digita Home Accounts £6, Bart Simpson Space Mutants £3. All absolutely mint, boxed, with manuals. Tel: Dave, Notts (0602) 397354. (48)

Atari STFM 2.5MB, TOS 2.06, 1.44MB HD disk drive, external disk drive, ICD link, blitter, Keyclicks, SC1224 colour monitor, That's Write 2, NeoDesk 3, Warp 9; loads more software, magazines and disks. £350 the lot. PageStream 2.2 brand new, unregistered £75. Tel: 0202 765544. (45)

4MB STE (TOS 1.62) and Philips CM8833 MkII monitor, both as new, £260. Canon BJ300 Bubblejet printer (mono), 80 characters wide, takes A4 and continuous, also envelopes; includes A4 cut sheet feeder, spare cartridges and 12 ink refills, vgc: £210. Forget-Me-Clock II £10. Diamond Back £10. Fontkit Plus 4 £15. HP Chrome/BJ Chrome £5. ICD Clean Up ST £10. Imagecopy Colour £8. Imagecopy 2 £10. Timeworks Publisher 2 £20 (Users' Guide to... book £5). True Paint £10. Textstyle £9. Tel: 0533 881249 before 6.30pm. (45)

HP LaserJet 4L: 4ppm, Resolution and Memory Enhancement technologies, PCL5, microfine toner, low usage (still using original toner - 3,000pp cartridge), under warranty (Nov '94) £450. Calamus S £190. MC68882 co-processor £50. Multipart, Imprint Col. £6 each. All prices inclusive. Tel: 0524 381581. (45)

MFM controller card, interfaces between a SCSI host adaptor ("Link", etc.) and up to two MFM hard drives: £65. Marpet unpopulated XtraRAM+8 board to fit the

Classified Adverts

Classified adverts are free to subscribers.
Please use the form on page 58.

STE (requires TOS 2.06) £55. Quick-shot Supervision handheld with four games £35. Phone 0282 615730. (45)

SharpScore, the only fully professional music publishing software for the ST. Latest version, fully registered with excellent manual, well supported and regularly upgraded. The retail price (from Take Control) is £460 - I will sell for £250. First Word Plus (v.3.20) with manual, mailmerge, dictionary and spellcheck £20. Pro-24 sequencer, mint condition, with manual and dongle £20. 061 962 3269. (45)

Golden Image scanner with Touch Up software £65 on. Digical Spreadsheet £4. Home Accounts £4. Games: Greenpeace Rainbow Warrior £5, Steve Davis Snooker £4, Backlash £3, Vampire's Empire £3, Star Wars £3, Barbarian £2. Flairpaint art package £5. Michtron print utilities £2. Lots of ST Formats and ST

Reviews with disks. 0323 500910. (45)

PageStream 2.2 - latest version - brand new and unused (purchased in haste before deciding to go PC); cost new £159. Sensible offers considered. 0704 894513. (45)

Atari ST games £7 each or nearest offer: Graham Taylor's Management, Speedball 2, Lemmings, Mercenary 3, Storm Master. £8 or nearest offer for Football Crazy (Kick Off 2, Player Manager and Final Whistle); £5 each or nearest offer: Blood Money or Puznil; £3 on: First Division Manager, North and South, Flip It and Magnose, Onslaught and Asterix. Phone 021 351 4909 eves only. (48)

Poqet PC hand-held PC with 512K PCMCIA card drive. Complete with MSDOS 3.2 and built-in WP, Comms, Address Book, Calendar, Calculator.

Worth £290, will sell for £140. Also: GFA 3.5 compiler, advanced programming, GEM utility kit and disks: £45 the lot. Phone 0225 464637 Mon-Thurs after 7pm. (45)

4MB STE in lighthouse tower, TOS 1.62/2.06 switchable, 245MB internal Quantum SCSI drive, ICD host adaptor, external SCSI port: £575. SM144 hi-res monitor £70. Daatascan Pro scanner £60. High density drive kit (inc. drive) £50. External drive £40. HiSoft Basic 2 £30, GFA Draft 3.14 £20, 300 disks of PD software £50. Or £800 the lot! Ring 0225 464637 Mon-Thurs after 7pm. (45)

Original software, boxed etc. F09 Retaliator, Hard Drivin' II, Lost Patrol, only £5 each. NeoDesk 2.01, UVK 3.6, Return to Europe (for K.O. II) only £3 each. Trim-base relational database £8. Phone John on 0742 366819. (45)

Falconwing £42 new, 68882 FPU £46 new, 65Mx 2.5in IDE drive incl. Falcon installation kit £100, 4x1 MSIMMS 70ns £110, TOS 2.06 £20, Powerup 2 (32MHz for Falcon) £50, low cost installation available on all items. Software: STalker 3 £20, Datalite 2 £20, XBoot 2 £10; books: Compute Programming in C £8, Compute Tech. Ref. Guide to TOS £8, ST Machine Language £5. 0224 869558 after six or weekends. (45)

Steinberg Pro 24 III brand new, unopened £35 inc. postage. ST Basic Metacomco unused, inc. source book and tutorial £5 inc. postage. Tel 0983 562313. (45)

Unison Eprom programmer: programs 2764(8k), 27128(16k), 27256(32k) and 27512(64k) Eproms. Two ZIF sockets for blowing consecutive, Hi, Low, or HI and Lo bytes - essential for ST car-

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

Morse Master

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

SynTax

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

Clip Art

Clip Art specifically for Christian and Community Magazines. Seven disks of IMG images for DTP programs supplied with a printed pic-

ture catalogue of every image. Cost: £3 per disk plus P&P: total of £23 for the set. Cheques payable to Peter Kempley, KemCom Designs, 21 Chart House Road, Ash Vale, Aldershot GU12 5LS.

Calamus Manual

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

STTrack

Use up to four light beams with your ST. Measure speed and acceleration. Write data to disk for spreadsheet. Invaluable for Science National Curriculum AT4. High resolution only. Software and manual with full details £20. Cheques payable to: F.J. Wallace, 9 High Elms Road, Hull-

bridge, Essex SS5 6HB.

Genealogy

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

Educational Adventures

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

Sonix Sound Sampling

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

Learning a Language?

ACADEMIC SOFTWARE supply several budget foreign language disks to help you in your studies. Call 0296 82524 any time (stating your address) for a free brochure sent same day. Or write to 128 Ingram Ave, Aylesbury, Bucks. HP21 9DJ. For demo, just send 4 first class stamps or SAE + disk.

Scanner Manager

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

tact: Stuart Coates, 9 Links Road, Kibworth Beauchamp, Leicester LE8 0LD.

Graph, Euclid and Stack

GRAPH can draw simple functions, implicit functions, parametric and polar functions and display the gradient functions of any of these. It will also display the solutions to first order differential equations and do a simple plot of complex functions. EUCLID enables you to draw any geometrical configuration including conics, circles, perpendiculars, bisectors, etc. STACK is an arithmetic calculator (HP type) for use with very large whole numbers. It will factorise smallish numbers quite quickly. Cost: £10 for a disk containing the programs, documentation and some examples. Michael Girling, Camel Quarry House, Wadebridge, Cornwall PL27 7HZ.

DEGASART

Demo disk of the above compart tutorial is now available. Please send a cheque/P.O. for £1 or a blank DS disk and an SAE to Keith Markland, 15 Stourton Road, Ilkley, W. Yorkshire LS29 9BG.

Morse/RTTY Transceive

Atari STE - Morse and RTTY transceive. Morse automatically locks to signal including hand sent code and will send at 10, 20 and 40 wpm. Noise filter option. Adjustable mark-space ratio. RTTY automatically locks to

tridges. Plugs into cartridge port. Complete with driver software and manual - £100. Eprom eraser: erases up to 4 Eproms at once, built in timer - £25. Atari ROM cartridges (as sold by CARE), takes two 27256 or two 27512 Eproms. 20 of @ £5.00 each; 27512 Eproms 36 of @ £4.00 each. Will sell separately as above but prefer to sell complete for only £250. Lattice C v5 £30. Phone Worksop 0909 773564 for Marlyn. (45)

PC hardware emulator for Atari ST, PC-Speed, £30. AT-Speed (285 emulation) £60 ono. Will fit any STFM or STE; hardly used - selling because of real PC purchase! Phone Stephen on 0553 829142. (46)

TW2 + "Companion" (brilliant guide) £35. Superbase Personal 2 £35. Touch Up v1.84 £25. Equinox Small Business Accounts £20. CalAssistant £12. Hyperpaint £8. Falcon F16 £8. Spellbook 4-6 £5. All originals with manuals. Keyboard case with coiled lead (separates ST keyboard from computer) £20 - all postinclusive. Jon 0785 46783. (47)

STE 1MB + monitor + ext. d/s dd drive + clock + Timeworks, 108 mainly magazine disks, and other accessories. £260. Tel: 021 744 3602. (46)

Games: Operation Stealth by Delphine Software £5; The Killing Cloud by Image Works £5; F15 Strike Eagle by Microprose £8. Phone Pat on 081 573 2736. (45)

Books: Atari Graphics and Sound, Atari Peeks and Pokes, Atari Basic Training Guide, Atari Tricks and Tips, as new, £25 the lot. Phone Evelyn Mills on 0275 854693 after 6pm. (48)

Hardware: 520 STE (upgraded to 1MB); Seikoshia SP-1900 Plus printer; mouse; 2 joysticks. Software: Discovery Extra Pack, ST Basic, Sensible Soccer, Football Director II, Campaign, Pacific Islands, F19 Stealth Fighter, European Football Champ, RBI 2 Baseball, Face-off Ice Hockey, 1st Division Manager, Gazza II, Tenstar Pack containing: Asterix, Chess Player 2150, Drivin' Force, Live and Let Die, Onslaught, Pipe Mania, Rick Dangerous, Rock 'n' Roll, Skweek, Trivial Pursuit. Write to: Barrie Little, Sheilagh, The Whins, Mof-

incoming signal up to 100 bands and will send at 50 and 25 bands. Both programmes have split screen type ahead buffers and are extremely easy to use: just fire up and you live. These programmes are £5 each. Write: Mr. V. McClure, 43 Roman Way, Seaton, Devon EX12 2NT.

Music Tutor Part 1

Teaches you to read music. This interactive course runs on any ST or Falcon in mono or colour, but a MIDI keyboard is required. Costs only £10 including printed manual, postage and packing. From: A. Graves, 81A Cambridge Road, Girton, Cambridge CB3 0PN.

MultiCAD

Vector-driven CAD/DTP program for the ST/STE. Design any kind of engineering drawing/posters/flyers/handbills/business cards/pattern design. Create your own library using the block save facility. Printout on Epson compatible printer 9- or 24-pin. Hi-res mono only. Large and enhanced screens support-

fat DG10 9JL. (46)

4MB STE with separate keyboard £220; 40MB hard drive, Calamus, PageStream, DA's Vector, NeoDesk 3 and much more: £150. 400dpi scanner + Touch Up £65; Star SJ48 inkjet printer £135. All items in excellent condition. Tel. Alan on 0232672338. (46)

Prospero C £20, Lattice C v5.5 £35, Fast Basic cartridge £5, all with manuals. Postage extra. Tel: 0363 772599 (Devon)

Hard disk - Seagate 296N SCSI (85MB formatted) in excellent condition, very reliable, no bad sectors: offers in region of £90. Also K-Spread 4 £25, K-Graph 3 £20, Superbase Professional £35, Tempus 2 £15, and various other bits and pieces of software, all with manuals and boxes. Offers considered. David Brook on 0908 265170. (46)

ST expanded to 2.5Mb Ram, SM124 monitor, Microvitek colour monitor, 2 external floppies, 40MB hard disk, mouse and joystick, PageStream 2.2, Harlekin 2, Superbase Pro, UIS III, HyperDraw, Spiritware Concordance v3 with NIV and Greek NT, Backpack utility cartridge, EasyDraw 2, Script, dbMan database, Personal Finance Manager Plus, K-Spread 2, Fun School 3, some games, plus huge quantity (200+ disks) software, and lots of ST magazines from 1986 on! £400 ono, might split. Low price as HDD sticks! Bob Almond, 081-304-5760; fax 081-304-7697. (46)

19" monitor and interface card. Genuine Atari board for Mega STs. Lovely Monitorm Viking 2/91 monitor gives 1280x960 pixels in mono on 19" screen. Complete with driver software, bargain at £400. Call Andy on 0908 503128 evenings & weekends. (46)

Canon 105K + sheetfeed £160. Spectre GCR £150. GI Opto-mech mouse £8. Cumana CSA 354 £35. K-Spread 4 £50. Superbase Pro £40. Lattice C v5.04 £30. UIS III £10. UVK v5.9 £5. View II £10.

ted. Excellent user support. Features include block cut/copy/paste/rotate/flip/scale, powerful auto repeat primitives and block paste, vector and bit-image text, units in mm/cm/mtr/Km/ins/ft/yds/pixels and user defined, snap-to-grid and snap-to-line, sixteen levels of drawing, landscape and portrait. Send cheque/P.O. for £24.95 payable to J.H.Taylor at: 12 West Drive, Cleadon, Sunderland, Tyne & Wear SR6 7SJ.

SciSet

SciSet is now available for Calamus. SciSet has been completely redrawn and now consists of 20 typefaces: serif, sans serif, italic, oblique, Greek, greek italic and science symbols, all in three weights - light, medium and bold. The letterforms have been designed to be resistant to variations in the printing technology. From: Dr. Graham McMaster, Retsum Computing Solutions, 12 High Street, Turriff, Aberdeenshire AB53 7DS; 0888 62328.

Oxford Chess 36. Starglider 2 £5. Mega STE SCSI host adaptor £40. CManship Complete £8, Users' Guide to Time-works £5. All as new with manuals, etc. Phone Ray on 051 929 3129 weekends. (47)

520 STFM extended to 1MB £120 ono. Forget Me Clock 2 £7 ono. Power Computing 49MB hard drive with power supply, lead and s/w £110 ono. SM124 monitor £55 ono. Lattice C v5.5 disks and full documentation £37 ono, NeoDesk 3 disk and manual £15 ono, Mini Office Graphics £7 ono, Master CAD 3D design package £8 ono, HiSoft C Interpreter £10 ono, Tempus 2 £12 ono, UIS III £7 ono, Superbase Personal £7, Daata Fax organiser and pack of filofax paper £10 ono, Flexidump for 9-pin colour dot matrix printers £6. ST Apps issues 1-43 £20 (collect or share postage), Abacus ST Tricks and Tips £7 ono, Abacus Gem Programmers' Reference £7 ono. Postage included at stated price. Phone Richard on 091 454 0215 after 6pm. (45)

Sharpcore music publishing software (and other items - please call) for £200. Call Tony on 061 962 3269. (45)

Wanted

TT030 in good condition. David Brook 0525 402051 ext. 212 (bus.), 0908 265170 (a/h). (45)

AdSpeed/Turbo 16/20 accelerator for STE, 1.44MB drive kit, Marpet +8 board, scanning tray, Merge It, Datalite 2, Forget-Me-Clock, GFA Basic and Compiler, Laserjet III Technical Ref. Manual. Swaps, deals, w.h.y. Let's talk! Jon 0785 46783. (47)

Korg Wavestation SR Editor for Atari ST computer, preferably Steinberg Synth-works. Tel Brian on 0909 486971.

Reflex graphics card for Mega ST. Phone after 6.30pm 0922 616358. (45)

Hotwire for the STE. 0983 562313. (45)

BBS

DNA BBS. Ireland's first, only and best Atari BBS. On line specialist technical and MIDI help. High speed callers especially welcome. Instant access on first call. A Ratsoft/ST BBS. Call (24hrs) +353-1-549029 (V32BIS). (50)

Protocol BBS. Three free to enter competitions currently running. With 'free' commercial software for your ST, PC or Amiga. 15 ST file areas online with plus PC and Amiga areas. Got any Game Save files? We have a Game Save file and message area. Upload some Game Save files and win a competition or download someone else's and help them out, or just see if you can do better. Give it a try! Full details online, friendly Sysop. Call 0642 596597 - 24 hours - 300 to 14400 bps. (R)

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

Call the Fractal BBS on 0305 266304. 14400+bps. Now running RATSOFT ST 2 fresh from the States. Any time after 9pm. (R)

The Bird Brain BBS - 0305 860245 10pm to 10am every night; all welcome. (R)


I'll Try That Once! ST-based BBS. Loads of file areas, 60-70 message echos, 10 on-line games. All speeds V326 V426. Give it a go! on 0453 765378 8pm to 8am. (R)

Crystal Tower BBS 081-447-8244 24hrs 300-2400 Baud (Towernet System) Atari ST, PC, Languages, Comms etc + much more. All welcome. (R)

General

Back up your HD to CD Rom for £50 + p/p. Re-use space you didn't realise you had! Also, CD disk containing the Atari archive in USA only £30. The CD has 480MB of compressed PD/SW, inc. some of the very latest. If interested, phone 071-873-2894 (after 11.00am) or 081-693-9325 (after 7pm). PD library enquiries welcome. (My daytime phone is restricted to London access only for dial out.) Ask for Simon. (49)

Portlink or serial interface for Atari Portfolio computer and/or any other items for swap or cash. Phone Paul on 081 542 8350 evenings or weekend. (45)



Falcon FacTT File

The Falcon and TT User Group

The Falcon FacTT File is a free-to-join Membership Club set up to encourage users to help users. Application forms can be obtained by sending a stamped self-addressed envelope (or International Reply Coupons if outside the UK) to:

FFF, 11 Pound Meadow, Whitchurch, Hants. RG28 7LG. UK

When completed return the form with a High Density disk and return postage. Your details will be added to the FFF at the next monthly update and your disk returned with a selection of the best Falcon PD and Shareware to fill the disk.

May the FFForce be with you!

Calamus 1.09N/S/SL (please include fonts used) and That's Write/Write On files printed on HP Laserjet 4P @ 600dpi. Send A5 SAE to: K. Hornby, 33INGLETON Drive, Lancaster LA1 4RA for further details. (51)

Calamus S and 1.09 output on HP Laserjet 4 at 600dpi - 20pence per sheet. Please include fonts with disk and SAE. Stephen Russell, 67 The Avenue, Camberley, Surrey GU15 3NF (0276) 21469. (54)

Cheap Litho printing and scanning service. Send SAE to Stephen Russell, 67 The Avenue, Camberley, Surrey GU15 3NF (0276) 21469. (54)

PDP magazine: a non-profit making venture for the Atari and Amiga owner. A serious publication covering reviews, general computer talk, programming, graphics and lots more. A new international look for 1994. Only 70p for a trial issue: 22, The Birches, South Wootton, King's Lynn, Norfolk PE30 0JG. Make cheque payable to J. Briggs. (53)

Exchange/sell Honda C70 for any software or hardware. Phone Paul on 081 542 8350 weekend/evenings. (45)

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

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Contacts

Atari contacts wanted in Surrey/South London. Ring Paul on 081 542 8350 evenings or weekend.

Anyone interested in forming a user group for the ST and STE in the area of Prestatyn please ring 0745 825036. Ask for Paul.

Falcon contacts wanted. Einar Skog, Svalåskferran 46, 4645 Nodeland, Norway. (46)

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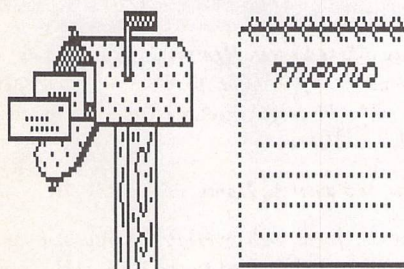
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	AP.901	Comms Terminals
	AP.910	Comms: Utilities
	AP.930	Comms: BBS Stuff
	AP.950	Radio Utilities #1
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		ART - COLOUR
	AC.100	Page3
	AC.101	Planets
	AC.102	Fantasy
	AC.103	Misc TNY #1
	AC.104	Misc TNY #2
	AC.105	Misc TNY #3
	AC.106	Freds
	AC.107	Doug Herring Portfolio
	AC.108	Misc TNY #4
	AC.109	Animal World
	AC.110	16+ Picture Show
	AC.111	Birds
	AC.200	Page 3
	AC.201	Misc SPC #1
	AC.202	Photofile Demo #1

AC.203	Photofile Demo #2
AC.204	Samantha Fox
AC.205	Samantha Fox
AC.206	Gigabyte Show
AC.250	Animals #1
AC.251	Animals #2
AC.252	Fantasy
AC.253	People #1
AC.254	People #2
AC.255	Raytrace
AC.256	Things 1
AC.280	SPX #1
AC.281	SPX #2
AC.282	Hotbabes #1
AC.283	Hotbabes #2
AC.284	Hotbabes #3
AC.285	Hotbabes #4
AC.286	Hotbabes #5
AC.287	Hotbabes #6
AC.288	Hotbabes #7
AC.289	Hotbabes #8
AC.290	SPX #3
AC.291	SPX #4
AC.292	SPX #5
AC.300	GIF Pictures #1
AC.301	GIF Pictures #2
AC.302	GIF Pictures #3
AC.303	GIF Pictures #4
AC.400	Art of Tobias Richter
AC.401	Art of Tobias Richter
AC.402	Wildlife Slideshow II
AC.403	Photochrome Slideshow
AC.450	Amiga IFF Pictures
	ART (CLIP ART)
AM.101	Animals
AM.102	Animals
AM.103	Animals
AM.104	Animals
AM.105	Animals
AM.106	Animals
AM.107	Animals
AM.108	Animals
AM.131	Cartoons
AM.132	Cartoons
AM.133	Cartoons
AM.134	Cartoons
AM.135	Seymour's Sketches
AM.136	Seymour's Sketches
AM.140	Office Art
AM.141	Office Art
AM.151	Teddy Bears #1
AM.152	Teddy Bears #2
AM.160	Kids #1
AM.161	Kids #2
AM.162	Kids #3
AM.180	Christian #1

AM.181	Christian #2
AM.182	Christian #3
AM.201	DTP Items #1
AM.202	DTP Items #2
AM.203	DTP Items #3
AM.204	DTP Items #4
AM.205	DTP Items #5
AM.206	DTP Items #6
AM.250	Engravings #1 and #2
AM.271	Fantasy #1
AM.272	Fantasy #2
AM.273	Fantasy #3
AM.274	Fantasy #4
AM.290	Plants #1
AM.291	Plants #2
AM.301	Food #1
AM.302	Food #2
AM.321	Greetings Cards #1
AM.322	Greetings Cards #2
AM.323	Greetings Cards #3
AM.324	Greetings Cards #4
AM.351	Houses #1 and #2
AM.361	Music #1
AM.362	Music #2
AM.381	People #1
AM.382	People #2 and #3
AM.384	People #4
AM.400	Entertainment #1
AM.401	Pin Ups #1
AM.402	Pin Ups #2
AM.403	Pin Ups #3
AM.404	Pin Ups #4
AM.421	Sports #1 and #2
AM.441	Transport #1
AM.442	Transport #2
AM.443	Transport #3
AM.461	Work #1
AM.462	Work #2
AM.481	World #1
AM.482	World #2
AM.601	Clipt #1
AM.602	Clipt #2
AM.603	Clipt #3
AM.604	Clipt #4
AM.605	Clipt #5
AM.606	Clipt #6
AM.607	Clipt #7
AM.608	Cooper Clip Art
AM.609	Cooper Clip Art
AM.610	Cooper Clip Art
AM.611	Cooper Wacky Cartoons
AM.651	Misc #1
AM.652	Misc #2
AM.653	Misc #3
AM.654	Misc #4
AM.655	Misc #5

AM.656	Misc #6
AM.657	Misc #7
AM.658	Misc #8
AM.659	Misc #9
AM.660	Misc #10
AM.661	Misc #11
AM.662	Misc #12
AM.663	Misc #13
AM.612	Grin Clip Art
AM.613	Grin Clip Art
AM.614	Lise Bis Jensen Portfolio
AM.615	Panthersoft Smart Art
AM.701	TNY #1
AM.702	TNY #2
AM.703	TNY #3
AM.704	TNY #4
AM.705	TNY #5
AM.900	EPS #1
AM.901	EPS #2
AM.950	GEM Art #1
AM.951	GEM Art #2
AM.952	GEM Art #3
AM.953	GEM Art #4
AM.970	CVG Clip Art
	DISK MAGS
DM.30	July '92
DM.31	September '92
DM.34	March 1993
DM.35	May 93
DM.36	July 93
DM.37	September 93
DM.38	November 93
DM.39	January 94
DM.40	March 94
DM.41	May 94
DM.42	July 94
	EDUCATIONAL
ED.101	Education #1
ED.102	Education #2
ED.103	Education #3
ED.104	Education #4
ED.105	Education #5
ED.106	Education #6
ED.107	Education #7
ED.108	Education #8
ED.109	Education #9
ED.110	Education #10
ED.111	Education #11
ED.112	Education #12
ED.113	Education #13
ED.114	Education #14
ED.115	Education #15
ED.116	Education #16
ED.117	Education #17
ED.118	Education #18
ED.201	Languages

ED.301	School Stuff
ED.401	Death of a President
ED.402	Death of a President
ED.403	Death of a President
ED.402	Search
ED.404	History File
	ENTERTAINMENT
EN.100	Games:Flying and Sports
EN.110	Games:Casino & Quizes
EN.120	Tetris
EN.121	Tetris Clones
EN.130	Word Games
EN.140	Strategy Games
EN.141	Strategy Games #2
EN.150	Puzzle Games
EN.160	Card Games
EN.170	Board Games
EN.200	Llamosoft Games
EN.210	Game Menu 1 and 2
EN.211	Game Menu 3
EN.212	Games #1
EN.213	Games #2
EN.214	Games #3
EN.215	Games #4
EN.301	Mono Games #1
EN.302	Mono Games #2
EN.801	Adventure Games #1
EN.802	Adventure Games #2
EN.803	Adventure Games #3
EN.804	Adventure Games #4
EN.805	AGT Adventure Games
EN.815	Grandad 2
EN.840	Michaels Big Adventure
EN.861	Dungeon & Dragons #1
EN.862	Dungeon & Dragons #2
EN.871	Adventure Game Help #1
EN.872	Adventure Game Help #2
EN.890	Games Help
EN.900	Demo Disk #1
EN.901	CyberStudio
EN.902	Lost Boys Definitive
EN.903	Demo Collection #1
EN.980	California Beach Girls
EN.981	Golden Girls
	FONTS
FN.100	Font Utilities
FN.101	Fontkit v3.31
FN.201	PageStream Fonts #1
FN.202	PageStream Fonts #2
FN.203	PageStream Fonts #3
FN.204	imageArt PageStrm Fonts
FN.301	PostScript Fonts #1
FN.302	PostScript Fonts #2
FN.303	PostScript Fonts #3
FN.304	PostScript Fonts #4
FN.305	PostScript Fonts #5

FN.306	PostScript Fonts #6
FN.401	Calamus Fonts #1
FN.402	Calamus Fonts #2
FN.403	Calamus Fonts #3
FN.404	Calamus Fonts #4
FN.405	Calamus Fonts #5
FN.406	Calamus Fonts #6
FN.407	Calamus Fonts #7
FN.408	Calamus Fonts #8
FN.409	Calamus Fonts #9
FN.410	Calamus Fonts #10
FN.411	Calamus Fonts #11
FN.412	Calamus Fonts #12
FN.413	Calamus Fonts #13
FN.414	Calamus Fonts #14
FN.415	Calamus Fonts #15
FN.416	Calamus Fonts #16
FN.417	Calamus Fonts #17
FN.418	Calamus Fonts #18
FN.419	Calamus Fonts #19
FN.420	Calamus Fonts #20
FN.421	Calamus Fonts #21
FN.501	GEM Fonts 300-dpi #1
FN.502	GEM Fonts 300-dpi #2
FN.503	GEM Fonts 300-dpi #3
FN.504	GEM Fonts 300-dpi #4
FN.550	GEM Fonts 360-dpi #1
FN.551	GEM Fonts 360-dpi #2
FN.552	GEM Fonts 180 & 360
FN.580	GEM Fonts 9-pin
FN.601	That's Write 300-dpi #1
FN.602	That's Write 300-dpi #2
FN.603	That's Write 300-dpi #3
FN.604	That's Write 300-dpi #4
FN.640	That's Write Fonts
FN.650	That's Write Fonts 360
FN.680	That's Write Fonts 9-pin
FN.701	Signum Fonts 24-pin
FN.702	Signum Fonts 300-dpi
FN.703	Signum Fonts
FN.751	German Signum Fonts
FN.752	German Signum Fonts
FN.753	German Signum Fonts
FN.754	German Signum Fonts
FN.755	German Signum Fonts
FN.756	German Signum Fonts
FN.757	German Signum Fonts
FN.800	Screen+Degas Fonts
FN.810	HP Softfont 300-dpi
FN.820	Fontpac Fonts
	GRAPHICS
GR.100	Paint Packages #1
GR.110	Crack Art 1.0
GR.111	Synthy v2.026

Table with 2 columns: Item ID, Title. Items include GR.112 Kozmik 4, GR.150 Mono Paint Packages #1, GR.151 Mono Paint Packages #2, GR.152 PAD 2.0, GR.153 PAD 2.4, GR.200 3D Graphics & CAD, GR.205 Kadinsky, GR.210 CAD Packages, GR.220 Effects Packages, GR.230 Animation Packages, GR.300 Persistence Of Vision, GR.301 Persistence Of Vision, GR.302 Persistence Of Vision, GR.303 Persistence Of Vision, GR.310 DKB Trace, GR.320 AIM 3.0, GR.321 AIM 3.0, GR.330 Image Pc's, Ray Tracers, GR.380 Fractals and Mandelbrot's, GR.381 Fractal Chaos, GR.400 GemView 2.4, GR.401 DMJ GIF, GR.402 Photochrome v3.0, GR.420 Image Tools #1, GR.421 Image Tools #2, GR.422 Image Tools #3, GR.440 TT Graphic Utilities, GR.450 File Format Specifications, GR.501 Graphic Demo's #1, GR.502 Graphic Demo's #2, GR.503 MegaPaint Demo, GR.504 DynaCADD Demo, GR.505 DynaCADD Demo, GR.550 Drawing Support Disk, GR.560 Graphics for Teachers, GR.600 CAD 3D, GR.620 Animations #1, GR.621 Animations #2, GR.622 Animations #3, GR.623 Animations #4, GR.624 Animations #5, GR.625 Animations #6, GR.626 Animations #7, INFORMATION, IN.100 Technical Info, IN.120 Ancient History, IN.121 Digests 1 and 2, IN.122 Digests 3 and 4, IN.150 Hardware Projects, IN.200 Info Files #1, IN.201 Info Files #2, IN.202 World Digitised, IN.203 Misc Info Files, IN.280 Bible #1: New Testament, IN.281 Old Testament, IN.282 Old Testament

Table with 2 columns: Item ID, Title. Items include IN.283 Old Testament, IN.500 ST News Issue 6.1, IN.501 ST News Issue 6.2, IN.502 ST News Issue 7.2, IN.503 ST News Issue 8.1, IN.504 ST News Issue 8.2, IN.505 ST News Issue 9.1, IN.506 ST News Issue 9.2, IN.520 MAGGIE 12, IN.530 STEN Issues 1, 2, & 3, IN.531 STEN Issues 4 & 5, IN.532 STEN Issues 6 & 7, IN.533 STEN Issues 8 & 9, IN.534 STEN Issues 10 & 11, IN.535 STEN Issues 12 & 13, IN.536 STEN Issues 14 & 14B, IN.537 STEN Issue 15, IN.550 Inside Info 49 & 50, IN.551 Inside Info 50 & 51, IN.552 Inside Info 52 & 53, IN.553 Inside Info 55 & 56, IN.554 Inside Info 57 & 58, IN.555 Inside Info 59, 60 & 61, IN.556 Inside Info 62 & 63, IN.557 Inside Info 64 & 65, IN.558 Inside Info 66, IN.559 Inside Info 67, IN.560 Inside Info 68, IN.561 Inside Info 69, MUSIC & MIDI, MU.100 DMJ Sound Lab, MU.101 Sample Tools #1, MU.102 Sample Tools #2, MU.150 Music Programs, MU.171 MOD File Players #1, MU.172 MOD File Players #2, MU.501 MIDI Utilities #1, MU.502 MIDI Utilities #2, MU.503 MIDI Utilities #3, MU.504 MIDI Utilities #4, MU.505 MIDI Utilities #5, MU.506 MIDI Utilities #6, MU.507 MIDI Utilities #7, MU.530 MIDI, MU.550 Accompanist, MU.600 MID Files, MU.701 MIDI Product Demo's #1, MU.702 MIDI Product Demo's #2, MU.703 MIDI Product Demo's #3, NEW SUBMISSIONS, NW.001 New Submissions #1, NW.002 New Submissions #2, NW.003 New Submissions #3, NW.004 New Submissions #4, NW.005 New Submissions #5, PROGRAMMING

Table with 2 columns: Item ID, Title. Items include PR.100 GNU C++, PR.101 GNU C++, PR.102 GNU C++, PR.103 GNU C++, PR.104 GNU C++, PR.110 GNU C, PR.111 GNU C, PR.120 MJC, PR.130 Heat and Serve C, PR.140 ANA Modula 2 v1.01, PR.150 ST ICON, PR.151 ST ICON, PR.170 Assembly Language, PR.201 Prog Languages #1, PR.202 Prog Languages #2, PR.203 Prog Languages #3, PR.204 Prog Languages #4, PR.205 Prog Languages #5, PR.301 Programmers Tools #1, PR.302 Programmers Tools #2, PR.303 Programmers Tools #3, PR.304 Programmers Tools #4, PR.305 Programmers Tools #5, PR.350 RSC File Utilities, PR.400 Learn to Program, PR.401 C Source Codes #1, PR.402 C Source Codes #2, PR.403 C Source Codes #3, PR.450 ST Applications Listings, PR.455 HiSoft Basic Sources, PR.460 STOS Source & Tools #1, PR.461 STOS Source & Tools #2, PR.465 ST Basic Source Codes, PR.481 GFA Utils & Sources #1, PR.482 GFA Utils & Sources #2, PR.483 GFA Utils & Sources #3, PR.484 GFA Basic Sources #4, PR.485 Your 2nd GFA Manual, PR.490 Pascal Source Codes, PR.491 Modula 2 Source Codes, UTILITIES, UT.100 Format Disks, UT.110 Disk and File Copiers, UT.121 Disk Utilities #1, UT.122 Disk Utilities #2, UT.140 Sagrotan 4.17, UT.141 Virus Tools, UT.160 Disk Cataloguers, UT.170 Disk Rec'y, Sector Editors, UT.180 Hard Disk Utilities, UT.190 Hard Disk Backup, UT.200 Desktops, UT.201 Desktop Icons, UT.210 Program Launchers, UT.220 CLI, UT.221 MiNT

Table with 2 columns: Item ID, Title. Items include UT.230 System Utilities, UT.240 Unix-like Utilities, UT.300 Boot-Up Utilities, UT.301 SuperBoot 8.1, UT.310 File Viewers, UT.320 Password Utilities, UT.331 File Utilities #1, UT.332 File Utilities #2, UT.350 Mouse Utils & TOS Fixes, UT.360 Screen Utils, Silly Stuff, UT.370 Mem Utils, RAM Disks, UT.380 CP's, File Sef's and Dir'y, UT.390 Calc's, Clocks and Kbd, UT.501 File Compression #1, UT.502 File Compression #2, UT.503 File Compression #3, UT.504 Two in One, UT.601 Emulators #1, UT.602 Emulators #2, UT.650 DMJ Utilities, UT.660 Support Disk, UT.670 TLC Utilities 2.0, UT.901 Printer Drivers #1, UT.902 Printer Drivers #2, UT.903 Printer Drivers #3, UT.910 HP DeskJet, UT.911 HP DeskJet and LaserJet, UT.980 Printer Utilities, WP and DTP, WP.100 1st Word and ST Writer, WP.101 Wordprocessors, WP.150 Text Editors, WP.151 JOVE and MicroSpell, WP.152 GNU Emacs, WP.153 Micro Emacs 3.10, WP.154 Everest 3.3e, WP.201 Wordprocessing Utils #1, WP.202 Wordprocessing Utils #2, WP.203 Wordprocessing Utils #3, WP.204 Wordprocessing Utils #3, WP.250 Text File Printing Utils, WP.251 IdeaList, WP.300 Translation Programs, WP.400 Words, WP.501 WP Demos #1, WP.502 WP Demos #2, WP.600 DTP Packages, WP.650 PageStream Support, WP.660 Calamus Support, WP.661 Calamus Winners, WP.670 Timeworks/GDOS, WP.690 Easy Text Plus Support, WP.695 Publishing Partner, WP.700 GhostScript, WP.701 Ghostscript Fonts, WP.702 Ghostscript Fonts

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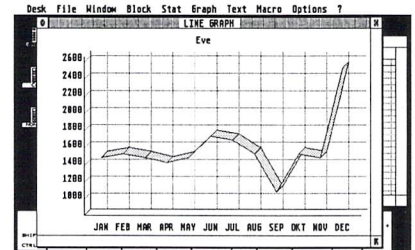
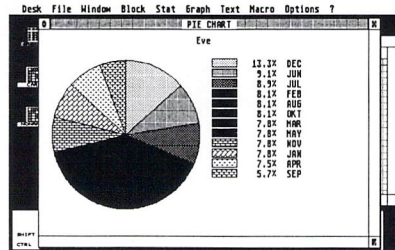
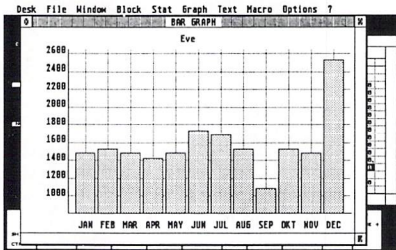
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3D Calc Plus



Desk File Window Block Stat Graph Text Macro Options ?

6:13D.CALC\DATA\ADM.3DD

6:13D.CALC\DATA\BUDGET.3DD

MULTIPLE RANGE GRAPH

GRAPH Graph title : _____ OPTIONS :

X - AXIS 3D-Graph : YES (NO)

Label range : B07 to cell : B017 Grid : YES (NO)

Y - AXIS Auto Y-axis : _____

Label range : C0 Number of lines : _____

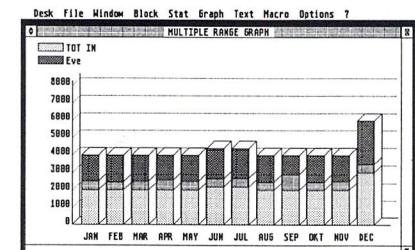
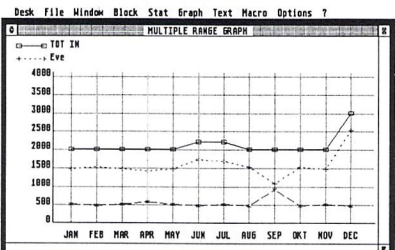
to cell : E0 Increment : _____

Data range : B02 Lowest value : _____

to cell : B012

EDIT CLEAR DELETE PRINT PAGE CALC REPEAT CALC PAGE PAGE

CTRL AC OUT/PAZ CLEAN CLEAN CLEAN CUT CALL NO TO REF-COL. NO TO



Desk File Window Block Stat Graph Text Macro Options ?

6:13D.CALC\TEXT\ADDM.PA.3DD

(*) 3D-Calc Programming language.

(*) Example program.

(*) This program assumes that the 3D-Calc datafile ADDRESS.3D (*) is present in the DATA folder on the active disk.

```

PROCEDURE GetId;
  ClrScr;
  Getoxy(2,5);
  Print("Enter name : ");
  Input(80,0);
  Ed$=0;"*";
  Ed$=Line(Ed$,c(1,a,2):c(1,a,1)high);
RETURN;

PROCEDURE NewRecord;
  ClrScr;
  line=high;
  ADD33;
  
```

EDIT CLEAR DELETE PRINT PAGE CALC REPEAT CALC PAGE PAGE

CTRL AC OUT/PAZ CLEAN CLEAN CLEAN CUT CALL NO TO REF-COL. NO TO

Desk File Window Block Stat Graph Text Macro Options ?

6:13D.CALC\DATA\ADM.3DD

DATE	1	7	13	19	25	31	Adam
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9
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11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12
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26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31
TOTAL	23468			12388	12080		

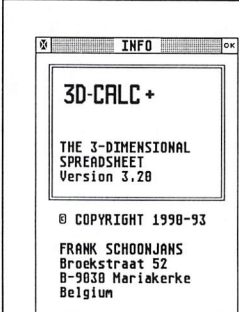
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- ASCII text option
- Automating 3D-Calc
- Averages and percentiles
- Bar, line and pie graph
- Block menu
- Calculations: manual - automatic
- Cell addresses
- Cell font options
- Clear block
- Clear cell
- Clear data
- Clear text
- Command line
- Copy block
- Copy block to text
- Copy cell
- Correlation coefficient

- Copy block
- Copy block to text
- Copy cell
- Correlation coefficient
- Cut and paste block
- Database functions
- Database statistical functions
- Date and time functions
- Define block
- Define column
- Define graph using the mouse
- Dialog forms
- Edit cell
- Export ASCII file
- Expressions and functions
- Financial functions
- Find
- Function and control keys
- Function graph
- Function keys

- Functions overview
- Functions: variables and constants
- Goto cell
- Graph options
- Graph output option
- Hide block
- Histogram - Cumulative distribution
- How a cell knows its own location
- Import ASCII file
- Indirect cell addressing
- Indirect cell addressing functions
- Link pages option
- Logical and other special functions
- Macro recording
- Macros
- Mathematical functions
- Move block
- Multiple range graph
- Multiple windows and titles
- On line help

- Open text window
- Operators
- Output window - Output format
- Paths option
- Print data
- Print text
- Program
- Programming language - command overview
- Programming language - introduction
- Programming language - program loop commands
- Programming language - settings & options
- Programming language - variables and functions
- Quit 3D-Calc
- Read block
- Read spreadsheet file
- Read text
- Reformat text
- Regression and correlation
- Save options
- Save spreadsheet data

- Save text
- Scatter diagram - Draw curve
- Set begin block - Set end block
- Set block values
- Settings
- Sort rows
- Spreadsheet 1, 2 and 3
- Statistical functions
- String functions
- Synchronization options
- Table: Distribution of t
- Table: Wilcoxon Rank Sum Test (unpaired)
- Table: Wilcoxon Signed Rank Test (paired)
- Text format
- Text menu
- The 3D-Calc desktop
- The cell pointer
- The spreadsheet windows
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- Write block

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