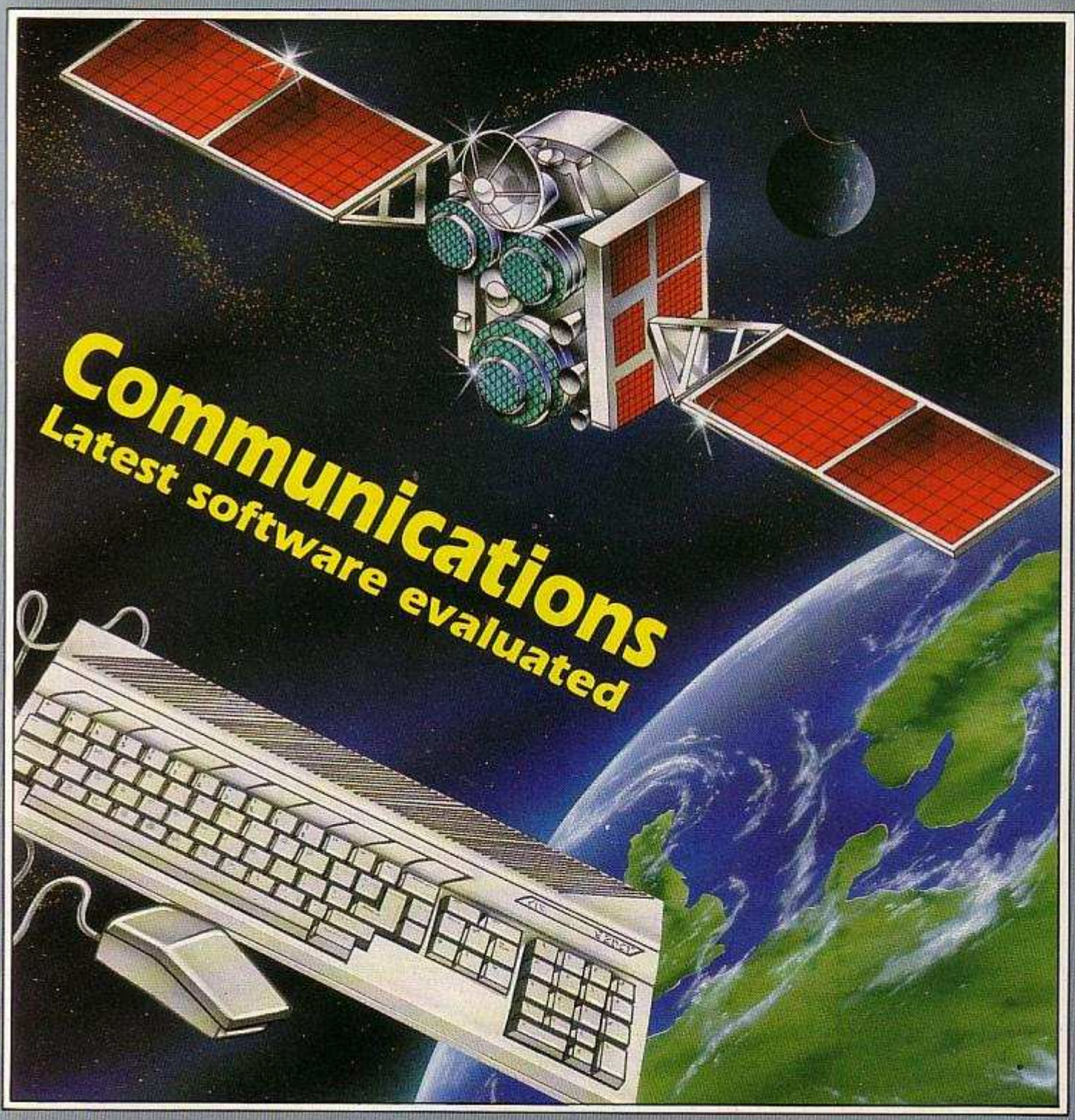
Vol. 2 No. 1 March 1987

Atari ST User



- Alert boxes: How to keep them under control
- ST graphics: Art and Film Director reviewed
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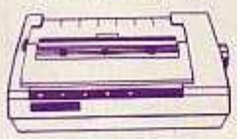

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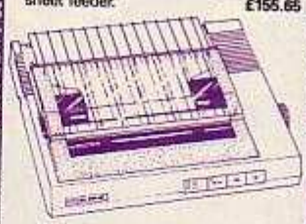

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The new MSPIO with 160 CPS Draft and 40 CPS NLQ. With TWO years Warranty £233.91

PANASONIC KX-P 1080

Impact dot matrix printer, ideal for applications that require economical high quality printing. It offers a variety of print modes, all producing crisp clearly formed characters. Wide choice of print sizes includes semi -compressed and commpressed (even in near-letter quality printing). Operator accessible print mode selector adds convenience. For a reliable printer at an affordable price, the KX-P 1080 is always a smart choice. £138.26

CANON PW1080A

80 column printer with 160 cps draft and 40 cps NLQ with built in friction and tractor feed. Fully compatible with Epson FX80. Standard parallel interface. £216.00

ALSO AVAILABLE

Citizen MSP15E	£329.57
Citizen HQP45	£539.13
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Epson FX105	£430.44
Epson LQ800	£517.39
Epson LQ1500	£895.99
Taxan KP815	£233.91
Taxan KP915	£346.96
Canon A-50	£233.91
Canon A-55	£346.96
Panasonic KX-P 1091	£199.13
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Micro MP 201	£277.00
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Juki 6100	£251.30
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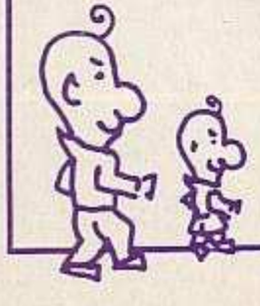
Panasonic KX-P 3131	£251.30
Star Power Type	£199.13



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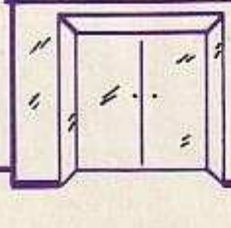

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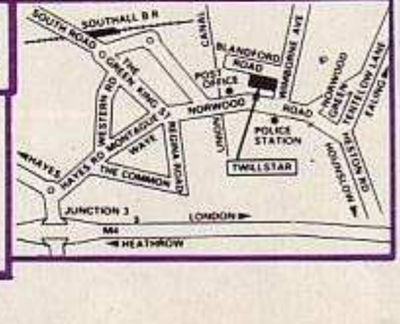

Atari desktop system bombshell

ATARI's entry into the booming desktop publishing market here in the UK is being awaited with baited breath. For the announcement that the company is soon to unveil a complete ST based system for around £2,500 has set alarm bells ringing for its rivals.

In particular, Apple – the company that is currently number one in the field – is running scared because its own Macintosh based unit costs more than three times as much.

Yet DTP experts are hanging fire with their predictions of market share for Atari until further technical details are released.

One of these is Henry Budgett, editor of the Desktop Publisher newsletter. "There is not sufficient information at the moment for any accurate forecast to be made", he told *Atari User*. "But at that price – as long as it does the job – it has a huge potential in offices, schools and colleges".

The key to the degree of success Atari achieves lies in the performance of its new laser printer. Unlike Apple's LaserWriter, it is reported not to have a built in processor. Instead it will be controlled by the 68000 chip in the ST.

"While this is okay for people with STs, it probably means you won't be able to run the printer off other machines", says Henry Budgett.

The other possible problem is that as the control will lie within the computer itself, it may limit the number of fonts (typefaces). "We suspect this may be the case because they can't be stored in ram", he says.

In fact this has led to some speculation that the new printer will only work effectively on an ST with at least two megabytes of memory.

But the news that observers are most anxious to hear from Atari is what programming language will be used, for this is what unleashes the power of the laser printer.

To date the leading package in this area has been PostScript from Adobe. But this is expensive to license and would substantially increase the price of the Atari system. However a new PostScript clone has just surfaced which may provide the answer.

Control-C Software of Oregon is the company behind CS Page which is likely to be a target for Atari in its bid to have the most competitive desktop publishing package around.

"All in all, if the Atari printer can produce the same end quality as the LaserWriter, then they are on to a winner", says Henry Budgett.

MEGA-ST AT THE SHOW

ALTHOUGH the new Mega-ST workstations are to be launched at next month's Atari Computer Show in London they will not go on sale immediately. Atari is not committing itself to a firm date for supplies to reach retailers' shelves, other than to say it will be during the second quarter of 1987.

Another major detail yet to be decided on is price – but company sources told *Atari User* this will definitely be announced at the Show, which starts at the Novotel on April 24. The new product launch will also involve the Atari PC, available here midsummer at a price of under £500.

Atari sales manager Paul Welch says there has been an excellent reaction from UK dealers to the new machines.

He told *Atari User:* "The trade has indicated its acceptance of the new lines and most major retailers and dealers have said they will stock them.

"All the signs point to this being a very good year indeed for Atari".

GOING FOR THE HARD SELL

WITH additions to the ST range on the horizon, Atari's aggressive new UK management team has been busy revitalising its approach to the marketplace. General manager Bob Gleadow is on record as saying: "We're looking to expand all our channels of distribution as part of our programme for 1987".

First important step has been to tie up a deal under which Lightning Distribution will handle the entire ST range. And tie-ups are expected to be announced shortly with other key distributors and leading high street retailers.

The agreement with Lightning is considered to be a major breakthrough as only two years ago the firm refused to handle the ST because of unsatisfactory profit margins on offer at the time.

More acceptable margins, new aggressive management at Atari, and what Lightning director Loretta Cohen calls "products for which we think there's a niche in the market" resulted in the change of mind.

Atari believes the improved ST range deserves the widest exposure possible, and wants to see the machines sold through such outlets as Dixons, W.H. Smith, Comet and Laskys – and possibly even Boots and Woolworths.

Mike Cowley reporting

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The 20Mb SupraDrive

NEW FROM FRONTIER

THREE powerful ST hard disc drives from American manufacturer Supra Corporation are now being distributed in the UK by Frontier Software.

The 20Mb version – price £699.95 – is claimed to be quieter and faster than the equivalent Atari SH204 drive, outselling it by a ratio of three to one in America. The Supra 30Mb drive, price £999.95, and the 60Mb drive, price £1,899.95, are unique to the ST market in terms of their capacity and speed.

EASIER ANIMATION

NEW from Microdeal for the ST is the Gem-based Sprite Construction Set for easy design of images suitable for animation. Up to 16 colours can be used and full cut-and-paste facilities are available through a clipboard.

Simple animations can be tested for accuracy from within the program. Price £19.95.

Mi-Print, also new from Microdeal, prints any text file, allowing control over paper size, all four margins, page numbers, headers, pitch and line spacing.

The program remembers the user's style preferences and printer type, permits utilisation of several styles and/or printers, and can save information to disc and recall it by name at a later stage. Price £19.95.

MARTIAL ARTS FOR THE ST

LATEST newcomer on the ST games scene is Nexus Productions, the company run by Beyond Software founders Bill Delaney and Clive Bailey, who are putting the finishing touches to two programs due to be launched in mid-March.

Graphic strategy and martial arts game Nexus, which has earned a place in the Commodore 64 Top Five, has been converted for the ST. The other game, Hades Nebula, is a space shoot 'em up. Both programs are expected to retail for just under £20.

Contrary to reports elsewhere, Nexus Productions is not launching its animated American football simulation Super Sunday for the ST. "We have no plans for an ST version of Super Sunday as yet, though market conditions could cause a re-think later in the year", Bill Delaney told *Atari User*.

THE CHOICE FOR CAD/CAM

ATARI ST machines have been chosen as workstations for a training course in advanced CAD/CAM for college and polytechnic lecturers.

Run by Wakefield District College in conjunction with Sandwell College, Birmingham, it involves open learning and open technology techniques which the lecturers taking the course will eventually pass on to industry and to those training to enter industry.

The course consists of a series of open technology modules containing comprehensive notes, examples and case studies, with packet switch stream telephone connection to advanced mini computer-based computer aided engineering software.

Each lecturer taking the course will be supplied with an Atari ST, modem and other open technology materials and will communicate via British Telecom PSS with a Vax computer at Wakefield and a Prime computer at Birmingham.

The course fee is £2,500, but is 100 per cent recoverable from central government support grants where applications are processed before March 31.

ADVANCED COMMS PACK

AARONFAY Marketing has announced a new communications package for the ST. ST Datacom is described as "the most advanced communications software yet to be released on the ST".

The package supports normal Prestel and viewdata emulations together with Ascii and Xmodem file transfer protocols. Additional features include an advanced macro command language, a dial directory and built in text editor.

ST Datacom costs £44.95.

ATARI SEEKS THE CLUBS

ATARI is hoping to forge stronger links with its user clubs throughout the UK The only problem is that it can't find all of them. For despite a recent request for groups to contact them with details of their activities the company is no nearer accomplishing its task of setting up a complete register.

"We would like details of clubs' activities, who to contact and what equipment they are using", said a spokeswoman for the company.

NOW YOU CAN WRITE EXPERT SYSTEMS ON THE ST

CAMBRIDGE LISP

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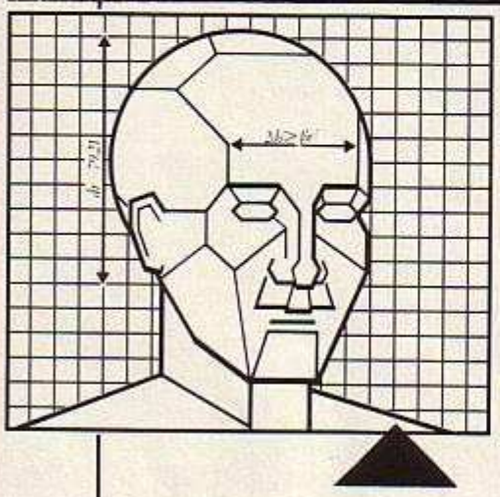


Cambridge LISP is unique and perhaps the most powerful language yet to become available for the ST. It combines an interpreter and compiler providing a complete environment for learning and using LISP, the language of Artificial Intelligence.

The interpreter makes it easy for you to learn LISP and to test and debug your programs as you go along. Once debugged, the compiler makes your programs run efficiently and quickly.

CAMBRIDGE LISP FEATURES

Integrated interpreter and compiler ► 16 Megabyte address space ► Rational Arithmetic ► Trig functions ► Integers of any size ► Floating point arithmetic ► Vectors ► Full Tracing ► Large numbers of built-in functions ► Will run on a 520 ST but we recommend the use of 1 Mbyte of RAM

Cambridge LISP has the computing power of very much larger and expensive systems. It comes complete with a full interface to GEM functions, example programs and a comprehensive, step-by step manual, all for **£149.95**

THE C COMPILER THE PROFESSIONALS USE

IBM COMPATIBLE C COMPILER FOR THE ST

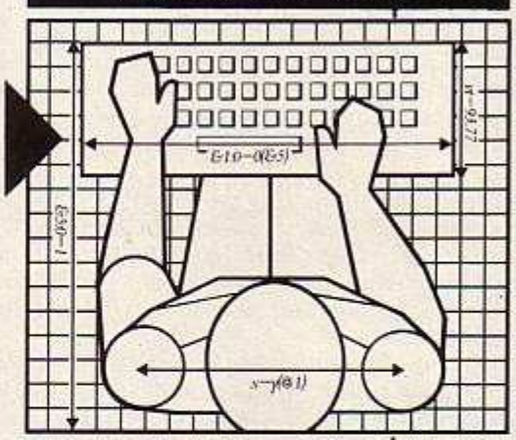
LATTICE C

Because GEM and TOS routines are written in C, using the C language is important to programmers who wish to use all the features and power of the ST. Lattice C is compatible with Lattice C compilers on the IBM-PC and other micros, this means structured, powerful and portable programming.

Lattice C is a full Kernighan and Ritchie implementation with floating point arithmetic, macros, powerful data types, separate compilation and a number of optimizations to produce fast and compact code.

Lattice C includes a complete interface to GEM VDI and AES functions and comes with comprehensive libraries of UNIX and utility functions. All the features of the ST – icons, windows, graphics etc. can be used. Modules written in assembler or other high level languages can be linked into Lattice C programs.

Lattice C includes Menu +, screen editor and a comprehensive user manual, all for **£99.95.**



"I felt most comfortable with the completeness and speed of Lattice C."

Atari ST User July 1986.

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BE ON YOUR ALERT!

By Andrew Bennett

HOW often have you wanted to quickly obtain a value from the user of one of your programs? Gem has a built-in routine to achieve this in the form of alert boxes, which can also be used to warn users of incorrect actions.

An alert is the small box which appears in the centre of the screen with a warning icon, a short message and up to three buttons – you can see an example by picking up a disc icon on the desktop and moving it on to the trash can.

Alerts are accessible from within any ST language including Atari Basic, even though it isn't mentioned in the manual. The string which defines the alert is the same in any language:

"[Icon Type][Actual Text][Button 1 | Button 2 | Button 3]"

Icon type is a number from zero to three – Figure I shows the choices available: A zero indicates that you don't want an icon to be displayed.

You must use a | symbol every time you wish to start a new line of text – you can find it on the key next to the left hand shift key.

The text can be made up of a maximum 5 lines of 40 characters each. Up to three buttons can be defined and each one is separated from the next with a | symbol.

Therefore a string such as:

"[2][This is an | alert box.][OK | Cancel]"

will become the alert box in Figure II.

One more input is required by form_alert, the Gem routine which controls alert boxes – the number of the default button. The default button is the one which responds to the Return key as well as the mouse.

Form_alert returns a number between 1 and 3, depending on which button was clicked on by the user. Your program must then act accordingly.

I have only given examples of how to define and display alert boxes in Atari Basic, C and Fast Basic, but the principles are the same for any ST language. ■

```
REM AN ALERT DEMONSTRATION

exit=ALERT("[2][ This is an | alert box.  ][ OK | Cancel ]", 1)

PRINT exit
```

Listing I: Fast Basic

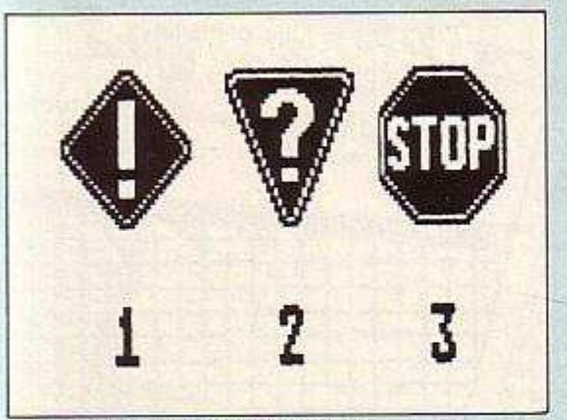

Figure I: The three choices for icon

```
do_alert()
{
int    default=1;
int    output;
char   alert[]="[2][ This is an | alert box. ][ OK | Cancel]";

output=form_alert(default, alert);

\* output will equal 1 for OK button and 0 for Cancel button */

}
```

Listing II: C

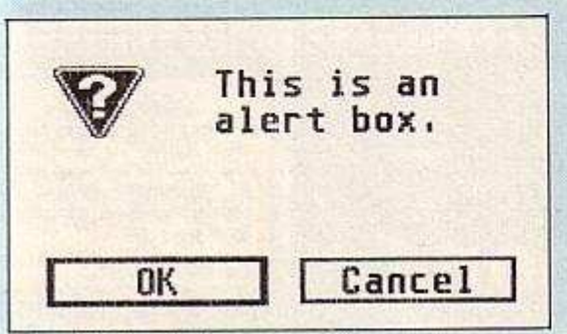

Figure II: The alert box

```
 10    REM ** ALERT DEMO IN ATARI BASIC **
 20    a#=gb
 30    CONTROL=PEEK(a#)
 40    GLOBAL=PEEK(a#+4)
 50    GINTIN=PEEK(a#+8)
 60    GINTOUT=PEEK(a#+12)
 70    ADDRIN=PEEK(a#+16)
 80    ADDROUT=PEEK(a#+20)
 90    A$="[1][ THIS IS AN ALERT ][  OK  | Cancel ]"
100    A=varptr(a$)
110    A1=INT(A/65536) : REM ** GET ADDRESS OF STRING
120    A2=A-(A1*65536)
130    POKE ADDRIN,A1:POKE ADDRIN+2,A2
140    POKE GINTIN,1 : REM ** DEFAULT BUTTON
150    GEMSYS(52)
160    PRINT PEEK(GINTOUT) : REM ** 'BUTTON SELECTED
```

Listing III: Atari Basic

AVAILABLE NOW...

GFA BASIC

GFA BASIC'S STRUCTURE

- No line numbers required but lines may have labels which can be numeric
- Supports PROCEDURES with local variables
- Recursive Procedures with parameter passing
- IF-THEN -ELSE-ENDIF, WHILE-WEND, DO-LOOP and REPEAT-UNTIL structures fully supported

Graphic Commands

Full access to LINE, CIRCLE, ARC, ELLIPSE, POLYGON, etc. Drawing control of line style and fill. DEFFIL command for 'unfilling' pattern.

Sound Commands

Control over voice, volume, note, octave and duration. The overall waveform and the mixing of the three voices, or white noise, can be defined.

GEM facilities

- Control of screen height, width
- Control of window size, shape, position
- Mouse control, read position, click states
- Open and Close windows, add titles

Operating System Functions

Routines may be called in BIOS, XBIOS and GEMDOS, with full passing of parameters.

Provides:

- A high speed BASIC
- GFA BASIC Interpreter programs run on any ST using supplied Run-only Interpreter
- Utility to translate ST BASIC programs into GFA BASIC
- All GFA BASIC programs may be compiled using GFA Compiler (not supplied)
- A modern highly-structured but easily used programming environment
- Full user-friendly Editor
- 11 digit mathematical precision
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BENCH MARKS

BASIC	Average time (seconds)
ST BASIC	8.4
FAST BASIC	1.8
GFA BASIC Interpreter	1.4
GFA BASIC Compiler	0.6

(PCW bench-marks using a 1040ST)

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Counting the cost of your software

Q A

WE start this month with a query from Tim Harris from Cardiff regarding the high cost of ST software. Tim wants to know how some software can cost as little as £19.99 when other titles are as much as £150.

By way of explanation, let me split the cost of a piece of software into its component parts for you.

The cost of a piece of software, such as 1st Word or Starglider, starts with the price of the disc and duplication.

Although end users can expect to pay anything from £1.30 to £2.50 for a blank disc, software companies usually order in thousands and can therefore expect to pay as little as £1. Add 75p for duplication and copy protection and so far we have a total of £1.75.

Now comes the cost of printing the supporting package. Coloured labels cost around 10p each to produce in quantity, while the manual – colour cover, black and white insides – will be about 50p. Add to this any payments to the author and we're up to about 75p for the complete manual.

The box or outside packaging costs will vary enormously depending on quantity, so we'll estimate this at approximately £1.50. So far we have a total cost of £4.10.

Now comes one of the largest costs – advertising. A full page, full colour advertisement in a magazine such as *Atari ST User* costs around £600 including VAT.

If the company advertises the product for three months in as many magazines, this runs to a total of £5,400, not including having the original artwork designed, which might easily cost £500.

Let's estimate that the total bill is £5750. Divide this by the number of units which the company hopes to sell, say 5000 for an average ST program, and we have an advertising bill of £1.15 for each unit.

On top of this, the programmer has to be paid so that he can continue to eat and to write more programs.

If he works full time for the software company, earns £20,000 a year and spends three months working on the program we can add another £1 to each of our 5000 units. A program bought from a freelance programmer will cost around the same in royalties.

Blank disc	£1.00
Duplication	£0.75
Disc label	£0.10
Manual	£0.75
Packaging	£1.50
Advertising	£1.15
Programmer	£1.00
Total	£6.25

Figure 1: The costs of producing software

Our running total is now £6.25, which doesn't include paying the office electricity and phone bills, or the expense of taking stands at shows. For argument's sake, let's ignore these since the company will probably have more than one program title on sale at any one time.

Of the income from any program, approximately 35% goes to the software company, 35% to the distributor and 30% to the dealer. Most copies will be sold through distributors, so the software company can only expect to net 35% of the retail price. For a £20 program this means only 75p profit per program, with a total profit of £3,750 for 5,000 units.

This isn't a lot of money on which to support staff and a business and this is the reason that most companies charge more than £20 for their programs. These companies feel that their product is worth £40 or £50 and in most cases they are right when you compare it with a similar program on the Apple Macintosh or IBM PC.

You must make the decision of whether to buy a program only after reading reviews and, if possible, having a demonstration at your local computer shop. I would be interested to hear your opinions on this subject, so why not write to me at the usual address.

● G.A. Kennings has written with some questions regarding the ST blitter chip. He wants to know if it works automatically and how this will affect the performance of games written before the blitter existed.

The blitter works by automatically speeding up the STs Line-A graphics routines which are used

→

More display options

Many of you will already know that double clicking on an Ascii file on the desktop will allow you to display its contents on the screen. The text is displayed one screen at a time, with a More prompt being displayed at the end of each.

If you press Space, the ST displays the next page, but did you know that there are two other options available?

Return displays one line of text at a time and **Control+C** returns to the desktop.

If you know of any others, why not let me know?

by Gem and most ST programs.

It will have little or no effect on ST games. Most serious games' programmers feel that even the fast Line-A routines are too slow to display scrolling landscapes, 3D graphics and the other effects that most games need. These programmers tend to write their own graphics routines which bypass their Line-A equivalents.

This means that games such as Starglider will not be affected by the blitter. Programs which will be affected include word processors and spreadsheets which will show a marked increase in their screen display and scrolling speeds, making everything appear much smoother.

● Graeme Hindmarsh was recently surprised to find that he had to upgrade his very early ST's Glue chip when he wanted to use a colour monitor and he asks if there are any other chip upgrades which owners of early STs should know about. I've had similar problems because my own 520ST was made in June 1985.

Most of the chips, including the keyboard, memory controller, Glue and video shifter chips in early STs, are version 1. After several upgrades most of these now have version numbers in the low 40s.

But there is no need to upgrade unless you encounter a problem when you add a new component to your system. For example, if you upgrade your 520ST to 1Mb you will probably have to buy a new memory controller chip.

The cost of ungrading any particular chip will be approximately £35 – the extra hidden cost of buying new technology early.

But while Atari might tend to bring out hardware before it is absolutely ready, it does at least make upgrades available.

Consider the Commodore Amiga, whose operating system has to be loaded from disc every time the machine is turned on.

Newer models have the OS on rom, but Commodore has stated that it won't be bringing out roms for the older Amigas and have therefore doomed owners to living with the disc operating system for good.

● Clement Lim from Chislehurst is having problems using his Epson LX-86 printer and sheet feeder with 1st Word. The program is printing one page of text and then feeding two extra blank pages.

I've been in touch with GST, the authors of 1st Word, and they tell me that the problem can be solved by placing a * in front of a line labelled Form Feed in the LX-80 installation file. ■

Send your Atari ST queries to: Atari ST User, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

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EDWARD SHARK reports

AS *Atari User's* trusty correspondent on this side of the Atlantic, I forced myself to fly to Las Vegas last month for the Winter Consumer Electronics Show.

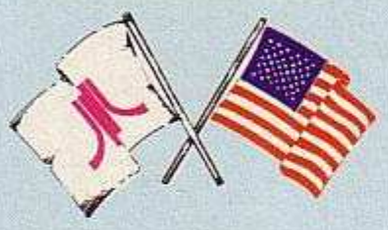
CES is the traditional forum for the electronics and computer trades to unveil their new products or test reaction to new announcements. Many of these products don't make it to the market because of poor reaction at one of the CES shows.

My main reason for jetting to Las Vegas, other than to lose money at the casinos, was to see what Atari had been hatching in the latter half of 1986.

As you've probably already read in the last issue of *Atari User,* Atari announced three new major products at a press conference on the day before CES, at the Dunes Hotel. I sneaked in and was lucky enough to see the new Atari IBM clone, ST laser printer and Mega-STs.

Except for slight differences in the keyboards, the Mega-STs and the IBM clones look identical in a case very similar to the Amiga's. The Mega-STs were described by one journalist sitting next to me as his "dream" ST configuration.

According to Atari, by the time you read this the company will have



started shipping the first Mega-STs, but I expect at least some delay because of the blitter chip.

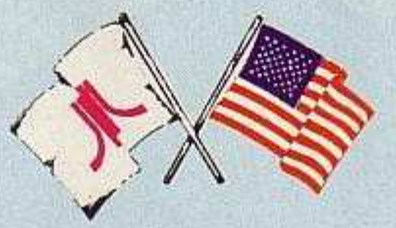
This, fitted as standard in the Mega-STs, is running behind schedule date of March and isn't likely to be ready before late April. Atari could start shipping the Mega-STs before then and the blitters could be fitted later, but this is unlikely.

★ ★ ★

The delays plaguing the blitter are due mainly to TOS, the ST's operating system. Fitting the blitter will also require a new set of TOS roms for your ST, which will contain the extra code required to interface the two.

Presently the blitter's version of TOS is loaded from disc on boot-up in much the same way as with the original STs before rommed TOS was available.

Arguments have been rife as to whether ST developers should receive a blitter with TOS on disc so that they



can start writing new software straightaway, or wait for the new TOS to be available on rom.

The problems really hot up when you take into account that Atari is also working on a new debugged version of the TOS roms which will not support the blitter. This will lead to there being three types of TOS – normal, 'blitter supporting and debugged.

The developers have urged Atari to release the blitter part of TOS as a program which will consume about 25k of ram and will load at boot-up.

This will mean that both normal and the new debugged TOS will be able to support the blitter. Hopefully Atari will take this sensible path – we'll just have to wait and see.

★ ★ ★

Atari has been advertising the 130XE on television recently as the "ultimate games machine". This is a pity, because the 8 bit Atari line, with its huge range of productivity and utility software, is not finished yet.

Hopefully customers will realise this when they have demonstrations at their local dealer's showroom.

★ ★ ★

Reading carefully through the prospectus that accompanied Atari's recent share release, I found out that contrary to common opinion, it's still very much a games company.

In 1986, 27 per cent of Atari's income came from the 2600 based home entertainment systems Jack Tramiel inherited from the old Atari.

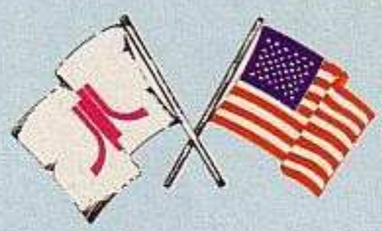
The 2600, 2600jr and 7800pro systems have sold in excess of 20 million units worldwide. Although sales are now slowing, the 0.125k system still has some life left in it and Atari is using the revenue to fund ST development.

★ ★ ★

The sales of Amigas and STs have grown considerably recently, because of the Apple IIGS. Apple is advertising the IIGS very heavily but has little or no stock in the shops to sell.

Apple dealers have been trying to steer people to the Macintosh side of their showrooms, but the high prices have put many off.

Having had their appetites whetted for 16 bit technology, these people are flocking to Commodore and Atari



dealers for demonstrations and eventual purchases. This situation is likely to go on for at least a couple of months while Apple increases production of the IIGS.

★ ★ ★

Supra Corporation's 3.5in 20Mb hard disc for the ST has been selling up to three times faster than its Atari rival, despite its slightly higher price. Having seen the Supra drive, I'm not surprised.

Atari's SH204 hard disc, roughly the same size as the 520ST, but about three inches high, sports a loud and strong fan. Supra's drive on the other hand is only slightly larger than an Atari 3.5in floppy drive and has a whisper quiet fan.

FAST

FAST BASIC

Atari ST cartridge

A new and very fast BASIC interpreter ROM cartridge for the Atari ST computers. This 128K program has been written specifically for the Atari ST computers and so makes full use of (and gives the programmer full access to) all the special features of this machine.

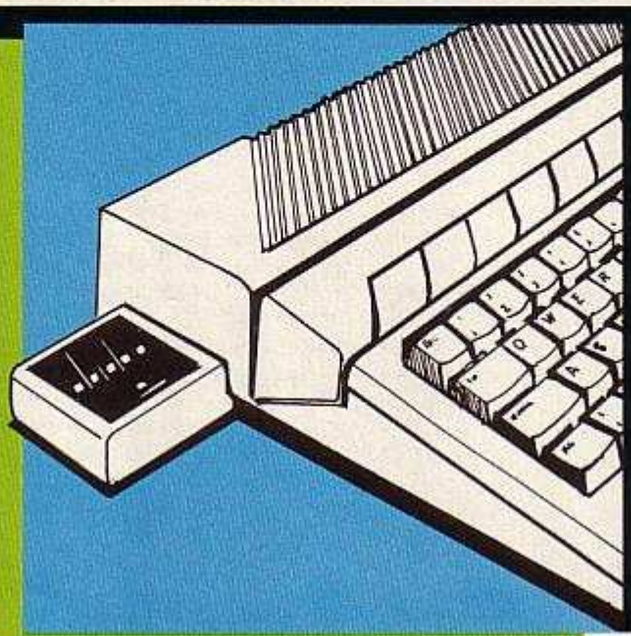
Based around BBC BASIC, but considerably extended, FAST BASIC is a modern structured programming language. It is the ideal environment for those who want to experiment with the ST and to find out about GEM and 68000 assembly etc.

SPEED
With an average PCW benchmark speed of 1.8 seconds, this is the fastest BASIC available (faster than any other PCW have tested) and is faster than BASIC running on the new Compaq 80386 super micro. See table for other comparisons.

EDITOR
A full GEM based scrolling editor is included. Supports search and replace, cut, copy, paste and very fast scrolling speeds. Multiple programs may be held in memory at once, and each program can have its own editing window and associated icon. A special immediate window allows commands to be used immediately without forming part of the BASIC program.

PROGRAM SIZE

There is no limit to program size, other than available memory, and there is no speed degradation for running large programs as there is on many other interpreters. Strings may be up to 64K long, arrays may be over 64K.



ASSEMBLER
Similar in concept to BBC BASIC, this allows mixing of assembly language and BASIC together. The assembler can assemble at over 50,000 lines per minute making it the fastest available. Macro and conditional assembly facilities combined with one of the best editors around makes this a superior alternative to many dedicated assemblers.

VARIABLES
FAST BASIC supports a full range of variables. 8, 16 and 32 bit integers for speed. Single and double precision floating point. Strings up to 64K and arrays of any size. The floating point maths routines are

Price £89.90 inc. VAT and postage. Available from all good Atari dealers or directly from Computer Concepts.

FAST BASIC INCLUDES:

- **ROM Cartridge** - it uses no RAM, leaving the maximum available for BASIC programs. It does not have to be loaded from disc and so offers instant start-up and can be permanently available.
- **Example disc** containing a range of example programs from simple loops to complete GEM examples.
- **Manual.** Comprehensive 400 page spiral bound manual detailing all commands.
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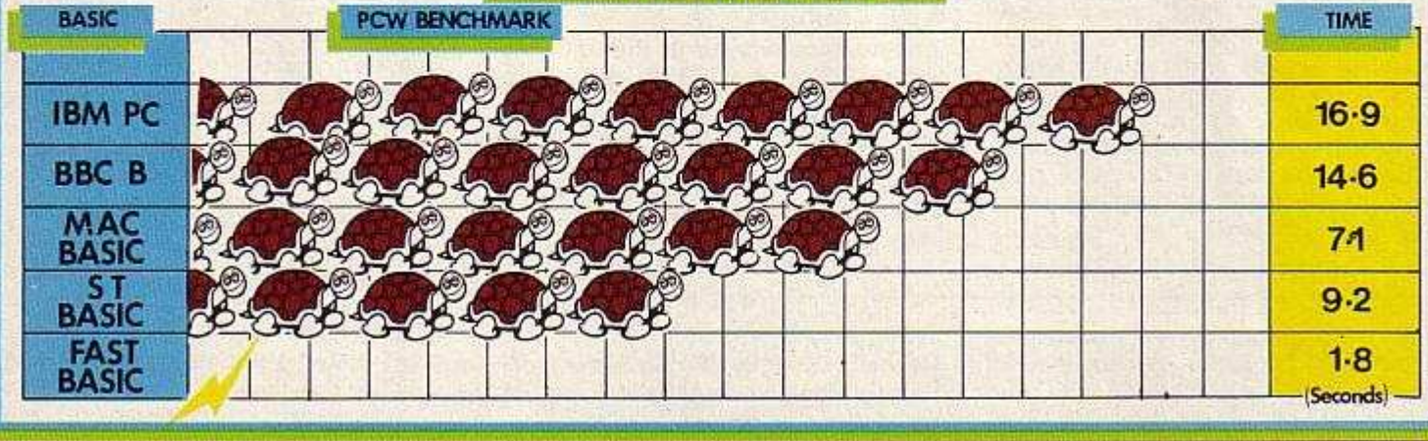
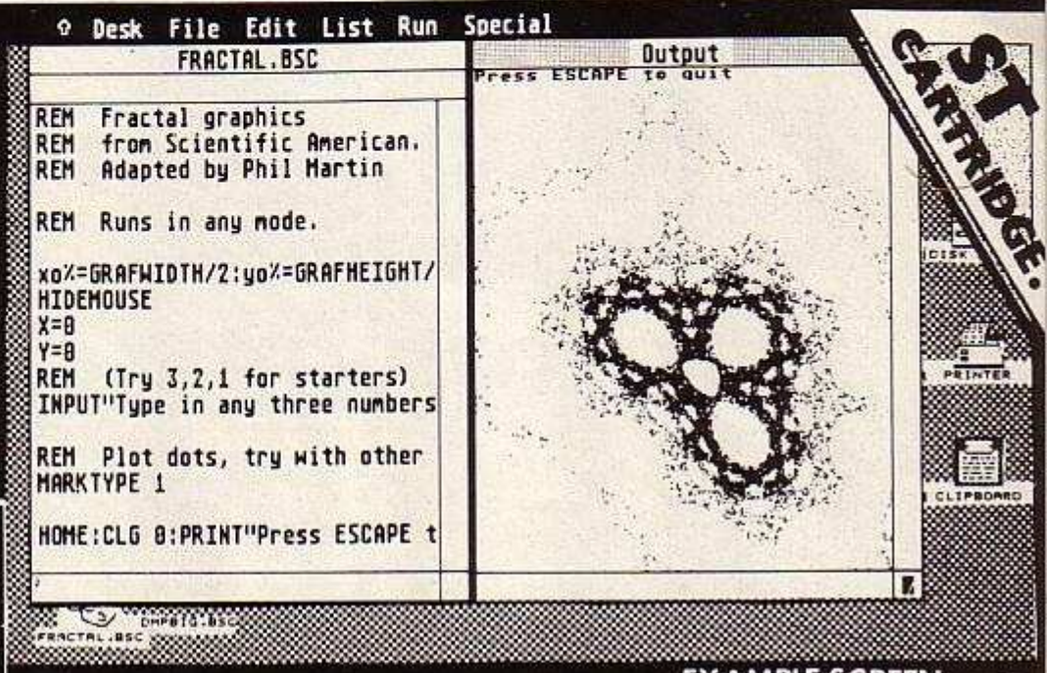
COMPARISONS



BASIC

STRUCTURED
Programs are normally written without line numbers. This, in addition to named procedures and functions, ensures that FAST BASIC programs are easier to write and simpler to understand than any other programming language. It also supports REPEAT..UNTIL, WHILE..WEND and multi line IF..THEN..ELSE constructs, and in addition a powerful SWITCH...CASE...ENDSWITCH structure eliminates the use of multiple IF..THEN statements. FAST BASIC supports many of the best features of languages like PASCAL or C, but without the drawbacks.



EXAMPLE SCREEN

GEM
Direct and full access is given to the ST graphics such as circle, arc, pie, area filling etc. In addition there is a range of keywords for controlling the menus, icons and windows. It is possible to write programs that present the user with a perfectly standard GEM type interface. An example of a complete GEM program is supplied on the example disc.

Review

"...it positively flies."
"Students of structured programming will be well pleased.."
"Perhaps the most staggering advantage of Fast BASIC over the official lingo concerns using the various facilities offered by GEM."
"...it's a vast improvement on Atari BASIC."

Popular Computing Weekly

Review

"The Fast BASIC package provides a complete system for the home programmer; the language is beautifully structured."
"The cartridge spans the gap between high level and low level programming languages and combines some excellent high level structures...It seems to have the advantages of languages like C and Pascal, without the restrictions."
"Bear in mind the fact that the cheapest assembler for the ST costs £39.95, this can only leave you to conclude that Fast BASIC really is phenomenal value for money."
"If you need a good programming language for home, business, or educational use, buy FAST BASIC. If you would like to program GEM applications but do not feel competent enough to tackle C, buy FAST BASIC. If you need a macro assembler with a good editor and enviroment, buy FAST BASIC."

ST User magazine - Oct 86

STAND ALONE DISC
Now available this disc enables FAST BASIC programs to run without the cartridge being present. Once a BASIC program has been written with the cartridge fitted, it can be converted, using this disc, to a stand alone GEM application program. Simply double click on its icon and it will execute the BASIC program as if it were a normal GEM program. This enables BASIC programs to be run while the cartridge slot is used for other things. Also programs can be written in FAST BASIC and given, or marketted, to others who do not have the cartridge. We ask no licence fee or royalties. £10 + vat

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Review

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Atari User - Nov 86

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A feast of features – in adventure trilogy

Program: Silicon Dreams
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Tel: 01-631 3589

GREAT! Rainbird has now issued the second Level 9 trilogy and it's every bit as good as the first, Jewels of Darkness, which featured three superb text and graphics adventures, Colossal Adventure (still one of the best ever for my money), Adventure Quest and Dungeon Adventure.

Now comes Silicon Dreams containing three more highly acclaimed adventures – the massive Snowball, the marvellous Return To Eden and the deliciously baffling The Worm In Paradise.

In Snowball, you take the part of Kim Kimberley (gender left cunningly ambivalent to please parties of either sex). The interstar transport, Snowball 9, is in transit from Earth to the planet Eden when the cryogenic system goes awry.

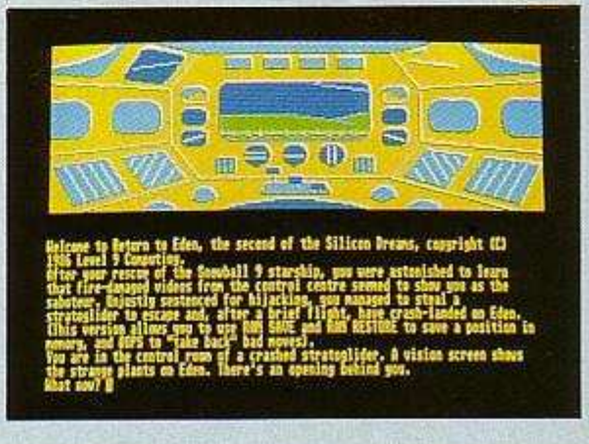
Chaos reigns, the life-suspended crew and potential colonists are in mortal danger and the ship is plunging out of control towards Eden. Can Kim save the day?

Having successfully rescued Snowball 9 from catastrophe, Kim is unjustly accused of sabotage in Return To Eden but manages to escape before the death sentence is, if you'll forgive the pun, executed. On Eden, you must seek out the city of Enoch and discover how to stop the planet's defence robots from destroying Snowball 9. Be warned – Eden is certainly one weirdo of a planet, and its inhabitants more so.

A century on, in The Worm In Paradise, you are virtually an Enochian geriatric. Well, maybe not old but certainly absent-minded; you have mislaid your memory. Something is terribly wrong, but can you regain your memory quickly enough to find out what and do something about it? Even if it means joining the ruling party?

As with the Jewels of Darkness trilogy, all these adventures were originally text only. But Rainbird is not content with re-issuing old material, even if it is of top quality.

Each of the original adventures has been subjected to a thorough rewrite, changing the overall style yet, thankfully, leaving the text faithful to the original classics.



Incorporated is a superb new parser which allows input of far more complex, multi-command sentences, a truly massive vocabulary (not less than 1800 words – is this a record?), more than 600 colourful illustrations (fast drawn and much better than the 8 bit versions, too), and hundreds of locations to explore.

The response times are very fast and there's the ability to type ahead – multi-tasking allows you to keep entering your commands regardless of whether a picture's being drawn or a response is spilling out.

And there's more. The text messages have been expanded to give fuller, more richly detailed descriptions. The program records the last 1,000 characters typed and with the inbuilt full function line editor you can backtrack and edit past commands.

In addition, an OOPS command lets you backtrack over 250 moves. Where others provide a snack of features, Level 9 proffers a feast.

And if that's not enough, the package comes handsomely boxed with a quality, glossy 64 page novel, Edensong, which includes a 12 page playguide to the three adventures.

This has got to be a best buy for all self-respecting ST owners. If you've never visited the planet Eden, you're in for a real treat. Don't miss out.

Brillig

Presentation	*10*
Atmosphere	*9*
Frustration	*9*
Value for money	*10*
Overall	*10*

Inscrutably Chinese

Program: Shanghai
Price: £24.99
Supplier: Activision, 23 Pond Street, Hampstead, London NW3 2PN.
Tel: 01-431 1101

SHANGHAI, based on the ancient Chinese game of Mahjong, has a deceptively simple objective. All you have to do is collect tiles from a board by matching them in pairs. Whoever removes the most tiles is the winner.

What makes it much more difficult than it sounds is the fact that the 144 tiles are laid out in a special fashion. They are set out in what is called the Dragon formation, though for the life of me I found it quite hard to picture the dragon the formation was supposed to represent.

The Dragon is built by mixing the tiles and then placing them randomly but face upwards in stacks of up to five tiles high, the piles getting taller towards the centre of the dragon.

The catch is that you can only match tiles that are on top of a pile and are free to slide to the left or right. Thus if the piles on both sides of a tile are not lower, then that tile is not free for selection.

The tiles show representations of various Chinese characters including winds, flowers, seasons, dragons and the suits of Dots, Bam and Crak. Very oriental, very attractive.

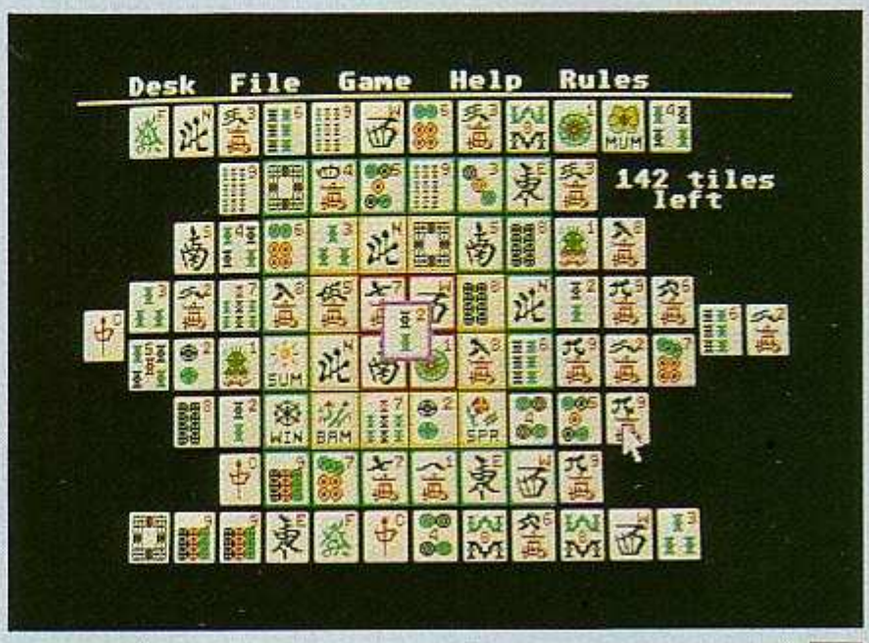
The depth of a pile is indicated by the thickness or colour of its border. A tile is selected by clicking the mouse pointer over it, whereupon the tile is highlighted. A double click over either of the selected tiles makes the match.

The program will not allow you to make an invalid or non-matching selection. When a correct match is made, those tiles are removed from the board. The game is over when all the tiles have been removed or no more moves are possible.

I found play quite engrossing. Just like when you're playing patience, there's always somene peering over your shoulder, giving advice, head shaking slowly from side to side – you know what I mean.

There are a variety of pull-down option menus. You can play solitaire, in a multi-player tournament or a two player challenge.

Although by selecting it you forfeit the game,



you can peek under a particular tile. Other options include taking back moves, revealing all moves and help with the rules and strategy. There is a charming animated title screen – a dragon, what else? – and the tiles are impressively depicted.

There is no sound to speak of, just warning beeps. This is a shame, as some Eastern music would have been more than appropriate. You really need a monitor to play this game to avoid eyestrain – and a monochrome one would be even better.

If you were a fan of patience games before the micro took over your life, I can recommend Shanghai. Unlike card patience, it gains considerably from being computerised. Much as I'd like a set of ivory Mahjong tiles, I'm sure I'd never be bothered to lay them out in the required pattern.

Shanghai is a neat idea, nicely executed, and if you don't get eyestrain easily you could easily get hooked on it.

Bob Chappell

Sound	3
Graphics	7
Playability	8
Value for money	8
Overall	8

Doing your own pin thing

Program: The Pinball Factory
Price: £24.95
Supplier: Microdeal, PO Box 68, St Austell, Cornwall PL25 4YB.
Tel: 0726 68020

WHETHER or not you're a pinball wizard and sure play a mean pinball, this game and construction set – for that's what The Pinball Factory is – should provide you with plenty of interest and entertainment.

The main menu screen shows a sample pinball table occupying the left half of the display and the option list to the right. You may load, play, save, erase, build or edit a game, or list the files on disc.

Once in the main edit mode the player may elect to create a new board or logo or modify an existing one (the logo is equivalent to the vertical backboard on a pinball machine and occupies the right half of the screen during play).

Items available during creating and editing are an RGB selector and 16 colours – each colour can be any of 512 variations – 10 brushes, a variety of patterns, and commands to fill areas and draw lines, rays, frames, circles, boxes and discs. Magnification can be used for fine detail work.

A wide selection of bumpers are available for fixing on the board. Click on the chosen bumper and then click anywhere on the board to fix it in position. Replication and removal is also simply achieved. Up to 300 bumpers can be inserted on the board. But will there still be room for the ball, I ask?

Additional items available for creating and editing a logo are small and large size characters, shadows, and air brushes.

While still in the edit mode you can play around with the laws governing behaviour of the board. You may alter gravity, elasticity, speed, number of balls per game, how often a player receives an extra ball, the value, strength of certain bumpers, and turn the "damper" on or off (this affects your ability to retrieve a ball from the out-of-play area below the flippers).

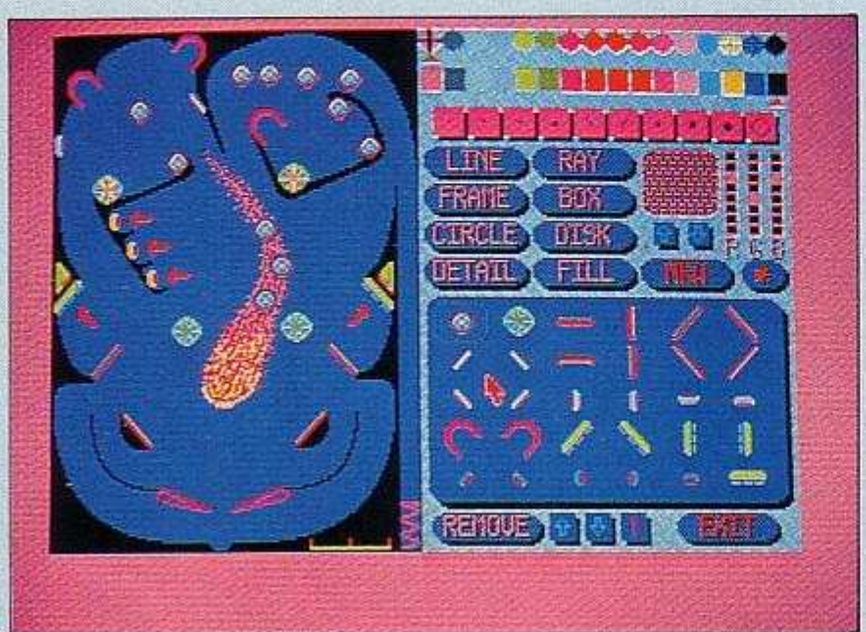
And while you're experimenting with the rules, you can always play an unlimited test game to test the table.

Once your vision has been turned into reality, you can save it to disc for posterity and then play it over and over to your heart's content. The ball release spring tenses or relaxes by pressing the up or down cursor keys, the spacebar releases the ball and the Tab and Delete keys (or the mouse buttons) work the left and right flippers.

Up to four players can take part, and there's even a Tilt facility for those who like that little bit of added realism. The game comes complete with a ready-to-play board and logo.

All good fun and offering much to while away a wet weekend. Whether you're game for a bit of furious flipping, bumping and tilting or prefer the gentler, more relaxing task of creating your own pintable masterpiece, The Pinball Factory should fit the bill nicely.

Douglas'Wooller



Sound	3
Graphics	7
Playability	8
Value for money	8
Overall	8

TECHNOLOGY SO ADVANCED ...

MEMORY
* 512Kbytes RAM (520ST-M, FM)
* 1024Kbytes RAM (1040ST-F)
* 192Kbytes ROM
* 128Kbytes external plug-in ROM option

ARCHITECTURE
* Motorola 68000 Central Processing Unit (CPU) with a clock speed of 8MHz
* 16-bit external data bus
* 32-bit internal data bus
* 24-bit address bus
* 8+32-bit data & address registers
* 7 levels of interrupts
* 56 instructions
* 14 addressing modes
* 5 data types
* DMA (Direct Memory Access)
* real time clock as standard

GRAPHICS
* full bit-mapped display
* palette of 512 colours

Using Atari Monitors (on 520 & 1040):
* 640×400 high resolution - monochrome
* 640×200 medium resolution - 4 colours
* 320×200 low resolution - 16 colours
* 80 column text display (40 col low res)

Using Domestic TV (on 520):
* 640×200 medium resolution - 4 colours
* 320×200 low resolution - 16 colours
* 40 columns × 25 line text display

SOUND AND MUSIC
* 3 programmable sound channels
* frequency programmable 30Hz - 125KHz
* programmable volume
* wave & dynamic envelope shaping
* programmable attack, decay, sustain, release
* Musical Instrument Digital Interface (MIDI)
* MIDI allows connection of synthesisers etc.

MOUSE
* high precision
* 2 button control
* free with 520ST-FM/1040ST-F
* non slip ball motion sensor
* removable ball for easy cleaning

STANDARD SOFTWARE
* GEM desktop + TOS operating system
* ST BASIC interpreter/language system

INPUT/OUTPUT
* MIDI out	(5 pin DIN) 31.25K baud
* MIDI in	(5 pin DIN) 31.25K baud
* audio out	1.0V DC peak to peak, 10K ohm
* audio in	1.0V DC peak to peak, 10K ohm
* RGB monitor	1.0V DC, 75 ohm
* mono monitor	1.0V DC, 75 ohm
* mono horizontal scan rate	35.7KHz
* mono vertical scan rate	71.2KHz
* sync	5V DC (active low) 3.3K ohm
* modem/serial	RS232C, 50 to 19,200 baud
* floppy disk	250 Kbits/s
* hard disk	11.3 Mbits/s
* mouse	standard Atari connector
* joystick	standard Atari connector
* cartridge port	128K capacity
* RF output (520ST-FM)	for TV use

OPERATING SYSTEM
* TOS with GEM environment in ROM
* hierarchical file structure with sub-directories and path names
* user interface via GEM, with self explanatory command functions
* multiple windows + icons
* window resizing, re-positioning and erasing
* drop down menus (selected by mouse)
* GEM virtual device interface

COMMUNICATIONS
* RS-232C serial modem port
* 8-bit parallel printer port
* MIDI port (also for networking use)
* VT52 terminal emulation

KEYBOARD
* standard QWERTY typewriter format
* 85 full stroke keys
* 10 function keys
* 18 key numeric keypad + cursor keys
* variable auto-repeat & key click response
* keyboard processor reduces CPU overhead

... IT'S AFFORDABLE

ONLY FROM SILICA

Finally, there's a personal computer that not only solves problems like other computers, but also solves the one problem that other computers have created. Affordability. Silica Shop are pleased to present the ST range of personal/business computers from Atari. The ST was designed utilising the most recent breakthroughs in semiconductor technology, producing a personal computer that performs tasks with fewer parts. Which means it costs less to make. And less to buy. The latest ST computers now include built in power supplies and built in disk drives. The TOS operating system and GEM window environment are now on ROM chips which are already installed in the ST keyboard. This enables automatic instant booting when you switch on. Silica Shop are pleased to offer the complete Atari ST range. Our mail order department is situated in Sidcup and we have 4 retail outlets at Sidcup, Orpington, Lion House (Tottenham Court Rd) and Selfridges (Oxford Street). We have eight years experience of Atari products, longer than any other UK company, and are well established as the UK's No.1 Atari specialist. With a group turnover of over £5 million and in excess of 70 staff, we provide unbeatable service and support. We provide several facilities which you will find invaluable during your Atari computing life and most of these facilities are available **ONLY FROM SILICA**. We suggest that you read through what we have to offer, before you decide where to purchase your Atari ST.

FREE STARTER KIT - Only From Silica

When you purchase any Atari ST keyboard, you will not only receive the best value for money computer on the market, but you will also receive the following from Atari Corporation as part of the package:

** BASIC Language Disk * BASIC Manual * ST Owners Manual * TOS/GEM on ROM*

If you buy your ST from Silica Shop, you will also receive:

** NEOchrome - colour graphics program * 1st Word - Word Processor*

In addition, we at Silica would like to see you get off to a flying start with your new computer, so we have put together a special **ST STARTER KIT** worth over £100, which we are giving away **FREE OF CHARGE** with every ST computer purchased at our normal retail prices. This kit is available **ONLY FROM SILICA** and is aimed at providing users with a valuable introduction to the world of computing. We are continually upgrading the ST Starter Kit, which contains public domain and other licensed software, as well as books, magazines and accessories all relevant to ST computing. Return the coupon below for full details.

DEDICATED SERVICING - Only From Silica

At Silica Shop, we have a dedicated service department of five full time Atari trained technical staff. This team is totally dedicated to servicing Atari computer products. Their accumulated knowledge, skill and experience makes them second to none in their field. You can be sure that any work carried out by them is of the highest standard. A standard of servicing which we believe you will find **ONLY FROM SILICA**. In addition to providing full servicing facilities for Atari ST computers (both in and out of warranty), our team is also able to offer memory and modulator upgrades to ST computers.

1Mb RAM UPGRADE: Our upgrade on the standard Atari 520ST-M or 520ST-FM keyboard will increase the memory from 512K to a massive 1024K. It has a full 1 year warranty and is available from Silica at an additional retail price of only £86.96 (+VAT = £100).

TV MODULATOR UPGRADE: Silica can upgrade the 1040ST-F to include a TV modulator so that you can then use it with your TV set. This is an internal upgrade and does not involve any untidy external boxes. A cable to connect your ST to any domestic TV is included in the price of the upgrade which is only £49 (inc VAT). The upgrade is also available for early 520ST computers at the same price.

THE FULL STOCK RANGE - Only From Silica

We aim to keep stocks of all Atari related products and our warehouse carries a stock of £1/2 million. We import many software titles direct from the USA and you will find that we have new releases in advance of many of our competitors. Unlike dealers who may only stock selected titles, we have the full range. In addition, we carry a complete line of all books which have been written about the Atari ST. A range as wide as ours is something you will find is available **ONLY FROM SILICA**.

AFTER SALES SUPPORT - Only From Silica

Rest assured that when you buy your ST from Silica Shop, you will be fully supported. Our free mailings give news of releases and developments. This will help to keep you fully up to date with what's happening in the Atari market. And in addition, our sales staff are at the end of a telephone line to service all of your Atari requirements. If you purchase an ST from Silica and would like any programming or technical advice, we have a full time technical support team to help you get the best from your computer. Because we have both the staff and the systems specifically dedicated to providing after sales service on Atari ST computers, we are confident that our users enjoy an exceptionally high level of support. This can be received **ONLY FROM SILICA**.

FREE CATALOGUES - Only From Silica

At Silica Shop, we recognise that serious users require an in-depth information service, which is why we mail free newsletters and price lists to our ST owners. These are up to 48 pages long and are crammed with technical details as well as special offers and product descriptions. If you have already purchased an ST and would like to have your name added to our mailing list, please complete the coupon & return it to us. The information service is available **ONLY FROM SILICA**.

FREE OVERNIGHT DELIVERY - From Silica

Most orders are processed through our computer within 24 hours of receiving them. Most hardware orders are sent by the overnight METRO courier service FREE OF CHARGE to customers within the UK. This method helps to ensure minimum delay and maximum protection.

PRICE MATCH - Only From Silica

We hope that the combination of our low prices, FREE UK delivery service, FREE Starter Kit and FREE after sales support, will be enough to make you buy your Atari equipment from Silica Shop. If however, there is something you wish to purchase, and you find one of our competitors offering it at a lower price, then please contact our sales department, providing us with our competitor's name, address and telephone number. If our competitor has the goods in stock, we will normally match the offer (on a 'same product - same price' basis) and still provide you with our normal free delivery. We realise that we are not the only company who will match a competitor's price. However, if you come to us for a price match, you will also be entitled to our after sales service, including free newsletters and technical support. This makes our price match promise rather special, something you will receive **ONLY FROM SILICA**. We don't want you to go anywhere else for your Atari products. So shop at Silica, the UK's No1 Atari Specialist.

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LONDON **01-580 4839**
Lion House (1st floor), 227 Tottenham Court Rd, London, W1

LONDON **01-629 1234 ext 3677**
Selfridges (1st floor), Oxford Street, London, W1A 1AB

520ST-M

The affordability of Atari computers is reflected in the price of the 520ST-M keyboard, which is a mere £259 (inc VAT). This version of the ST comes with 512K RAM, as well as a modulator and lead for direct connection to any domestic TV. The price does not include a mouse, in addition, when you buy your 520ST-M from Silica, you will also receive the FREE Silica 'ST Starter Kit'. During 1987, many software houses will be producing games software on ROM cartridges, which will plug directly into the cartridge slot on the 520ST-M keyboard, giving instant loading without the expense of purchasing a disk drive. With the enormous power of the ST, you can expect some excellent titles to be produced, making this the ultimate games machine! If your requirement is for a terminal, then the 520ST-M can fulfill this role too. Leads are available to connect the ST to a variety of monitors, and with the imminent introduction of terminal software on ROM cartridge, the ST provides a low price terminal for business use. If you wish to take advantage of the massive range of disk software available for the ST range, you will need to purchase a disk drive. Atari have two floppy disk drives available, a ½ Mbyte model £149 and a 1Mbyte model £199. Full details of these drives, as well as the Atari 20Mbyte hard disk are available on request. If required at a later date, the mouse may be purchased separately.

£259

520ST-FM

The 520ST-FM with 512K RAM and free mouse, represents a further breakthrough by Atari Corporation in the world of high power, low cost personal computing. This model is the latest addition to the ST family, and is not only powerful, but compact. It is priced at only £399 (inc VAT) a level which brings it within the reach of a whole new generation of computer enthusiasts. When purchased from us, it comes with the FREE Silica 'ST Starter Kit' see paragraph on the left. To make the 520ST-FM ready for use straight away, Atari have built into the keyboard a ½ megabyte disk drive for information storage and retrieval, allowing you easy access to the massive range of disk based software which is available for the ST. This new computer comes with all the correct cables and connections you will need to plug it straight into any standard domestic television set. You do not therefore have to purchase an Atari monitor, if you do require a monitor however, these are available with the 520ST in the following money saving packages:

520ST-FM Keyboard	*Without Monitor*	*- £399 (inc VAT)*
520ST-FM Keyboard + High res mono monitor		*- £499 (inc VAT)*
520ST-FM Keyboard + Low res colour monitor		*- £599 (inc VAT)*
520ST-FM Keyboard + Med res colour monitor		*- £699 (inc VAT)*

Because the 520ST-FM has its own power transformer built into the keyboard, there are no messy external adaptors to clutter up your desk space. You are left with only one mains lead, serving both the disk drive and the computer. You couldn't ask for a more stylish and compact unit.

£399

1040ST-F

For the businessman and the more serious home user, Atari have their most powerful model, the 1040ST-F with 1028K RAM. This low cost powerhouse can be introduced into a business environment as a stand-alone system, or can support a mainframe computer as a terminal. The 1040ST-F not only features twice as much memory as the 520ST-FM, but also includes a more powerful built-in disk drive. The drive featured on the 1040ST-F is a one megabyte double sided model. The extra memory facility of the 1040ST-F makes it ideal for applications such as large databases or spreadsheets. Like the 520ST-FM, the 1040ST-F has a mains transformer built into the console to give a compact and stylish unit with only one mains lead. The 1040ST-F is also supplied from Silica Shop with a free software package and 'ST STARTER KIT'. In the USA, the 1040ST-F has been sold with a TV modulator like the 520ST-FM. However, for the UK market, Atari are manufacturing the 1040ST-F solely with business use in mind and it does not currently include an RF modulator, this means that you cannot use it with a domestic TV (Silica Shop do offer a modulator upgrade for only £49). The 1040ST-F keyboard costs only £599 (inc VAT) and, unless a modulator upgrade is fitted, will require an Atari or third party monitor. There are three Atari monitors available and the prices for the 1040 with these monitors are as follows:

1040ST-F Keyboard	*Without Monitor*	*- £599 (inc VAT)*
1040ST-F Keyboard + High res mono monitor		*- £699 (inc VAT)*
1040ST-F Keyboard + Low res col monitor		*- £799 (inc VAT)*
1040ST-F Keyboard + Med res col monitor		*- £899 (inc VAT)*

The 1040ST-F comes with a mouse controller and includes 1Mbyte of RAM. It has a 1Mbyte double sided disk drive and mains transformer, both built into the keyboard to give a compact and stylish unit, with only one mains lead.

£599

ATARI ST

To: Silica Shop Ltd, Dept ATUSR 0387, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

PLEASE SEND ME FREE LITERATURE ON THE ATARI ST

Mr/Mrs/Ms: ..... Initials: ..... Surname: .....

Address: .....

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..... Postcode: .....

Do you already own a computer
If so, which one do you own? .....

MEGAPAC

520 STFM SYSTEM BY A.S.&T.

The new 520 STFM from ATARI has been an instant hit since its announcement. The design has gained from experience with earlier ST and STM machines and the result is a practical and superbly engineered computer that will easily find its place in your home as well as in your business.

MEMORY:

The basic 520 STFM has 192K bytes of ROM, an optional 128K bytes of plug-in ROM cartridges and 512K of RAM. The MEGAPAC 520 STFM has bigger memory — a full ONE MEGABYTE of RAM, like the 1040 STF.

DISC DRIVES:

The basic 520 STFM has a built-in single-sided disc drive. The MEGAPAC 520-STFM comes with two drives, one internal and one external. The latter is double-sided, offering twice the capacity (720K) of the built-in drive (360K). Your disc bill can be cut by almost half when compared with that of basic 520 STFM users.

PROCESSOR:

The Central Processor unit (CPU) is a Motorola 16/32 bit 68000 chip, running at a clock speed of 8 MHz. It is further enhanced by Atari's own custom ICs providing a Direct Memory Access (DMA) channel for fast data transfer with other peripherals such as the ATARI SH204 Winchester drive or the Atari Laser printer (available soon) and a real time clock.

DISPLAY:

The 520 STFM can display 40 or 80 column text on any domestic TV or colour monitor such as the Philips CM8533 or the dedicated ATARI SM125 high resolution monochrome monitor. Graphic is 600 × 400 pixels on the SM125, 600 × 200 pixels in 4 colours or 320 × 200 pixels in 16 colours on a colour monitor or TV. The colour palette contains 512 possible colours. Some ATARI software indeed uses the exceptional display hardware to produce stunning graphics with up to 256 colours at once.

MIDI INTERFACE:

The 520 STFM has 3 programmable sound voices and a Musical Instrument Digital Interface (MIDI) to allow direct connection to a wide range of musical organs and synthesizers such as the Casio CZ230S.

MOUSE:

The 520 STFM has its own dedicated mouse as part of its standard hardware.

PERIPHERAL CONNECTORS:

The 520 STFM can be easily expanded by plugging in 'add-ons' through its ports. They will accept printer (Centronics port), Modem (RS232 port), musical instruments (Midi port), sensors (joystick port) and fast intelligent devices such as network, Winchesters, laser printer etc (SCSI port).

BUILT-IN SOFTWARE IN ROM:

The 520 STFM has 192K bytes of permanent software in ROM. This comprises GEMDOS, the disc operating software which is now becoming the dominating standard for 16 bit computers, and GEM, the Graphic Environment which uses pictures and drawing instead of cryptic messages to communicate with the user and the electronic Mouse in place of the keyboard to enter the user's commands.

SOFTWARE ON 5 DISCS:

The MEGAPAC 520 STFM comes with 5 discs, containing an impressive collection of software by any standard:
Disc number 1: contains the BASIC language.
Disc number 2: contains LOGO, + DOODLE + MEGAROIDS, STWRITER and WORDPROCESSOR program.
Disc number 3: contains Neochrome, a painting program and demo pictures.
Disc number 4: contains CPM utilities.
Disc number 5: contains the CP/M emulator.

720K DOUBLE SIDED SECOND DRIVE

£539.
THE PRI

FULL ONE YEAR GUARANTEE

ALSO AVAILABLE

SYSTEM BUILDERS . . .

ATARI COMPUTERS:

1 520 STM computer keyboard, external PSU, 512K RAM, 5 s/w discs	£259.00
2 520 STFM computer keyboard, internal PSU, internal single sided (360K) disc drive, 512K RAM, 5 s/w discs	£371.00
3 520 STFM with monochrome (SM125) monitor	£464.00
4 520 STFM+ computer keyboard as above but with 1 MB RAM	£439.00
5 520 STFM+ with monochrome (SM125) monitor	£533.00
6 MEGAPAC 520 STFM	£539.00
7 MEGAPAC 520 STFM with monochrome monitor	£633.00
8 1040 STF computer keyboard, internal PSU, internal double-sided (720K) disc drive, 1 MB RAM, 5 s/w discs	£556.00
9 1040 STF with monochrome monitor	£649.00
10 MEGAPAC 1040STF (twin double sided drives)	£655.00
11 MEGAPAC 1040 STF with monochrome monitor	£749.00

MONITORS:

1 SM125-12" high resolution (600 × 400) B/W monochrome	£135.00
2 SC1224-12" medium resolution (600 × 200) colour monitor	£372.00
3 Philips CM8533-14" medium resolution colour monitor	£299.00
4 NEC Multisync-14" colour monitor, can replace SM125 and SC1224 to display hi-res monochrome and colour	£699.00

DISC DRIVES:

1 SF354 single sided disc drive with PSU, 360K	£139.50
2 SF314 double-sided disc drive with PSU, 720K	£185.50
3 A.S.&T. 1000C double sided disc drive for STF or STFM, uses ST's PSU	£99.00
4 Stand-alone PSU for the above if required (eg 520 ST)	£25.00
5 Twin 1000C with PSU for 520 ST	£199.00
6 A.S.&T. 1000F - 5¼", double-sided disc drive, 720K, alternative choice to SF314 or A.S.&T. 1000C but with 40/80 track switch for IBM PC and compatible discs	£124.00
7 Stand-alone PSU for the above if required	£25.00
8 SH 204 - 20 Megabyte hard disc (Winchester)	£640.00

PRINTERS:

ATARI SMM 804 printer, 80 cps	£199.00
2 STAR NL-10 compatible printer. 120 cps in draft mode and 30 cps in near letter quality (NLQ). All control codes are EPSON FX compatible	£269.00
3 STAR NX-15 compatible printer. 120 cps wide carriage	£385.00
4 STAR NB-15 compatible printer. 300 cps draft. Near Letter Quality and Letter quality printer. Top of the range. Special offer for limited period (you save £243.00)	£699.00
5 JUKI 5510 printer. 160 cps in draft, 40? cps in near letter quality	£329.00
6 MP165 compatible printer. 165 cps in draft mode. 40 cps in near letter quality. Exceptional value	£219.00
7 JUKI 6100 daisy wheel printer. 20 cps	£285.00
8 Black ribbon for all dot matrix printers from	£5.00
9 Different faces Daisy Wheels from	£15.00
10 Fanfold paper 11" × 9.5", 60 gsm, 2000	£14.00
11 Fanfold paper 11" × 9.5", 100 gsm, 2000	£30.00

BOX OF 10 DISCS:

1 Sony 3.5" single sided, double density	£22.00
2 Sony 3.5" double sided, double density	£29.00

CABLES:

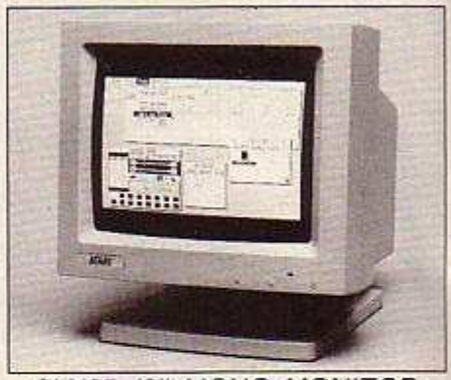
RGB video leads for Sony or Grundig TV with Euro connector, Philips CM8533	£15.00
Atari drive leads	£15.00
Printer leads	£15.00
Modem leads	£15.00

BABT APPROVED MODEMS:

1 WS4000	£172.44
2 WS3000	£569.25
3 Fastcom terminal software, supports also Prestel	£49.95
4 BBS Version 2.0 for Bulletin Boards	£49.95

MIDI INSTRUMENTS:

1 Casio CZ230S	£295.00
2 Easy Track Midi software	£59.95



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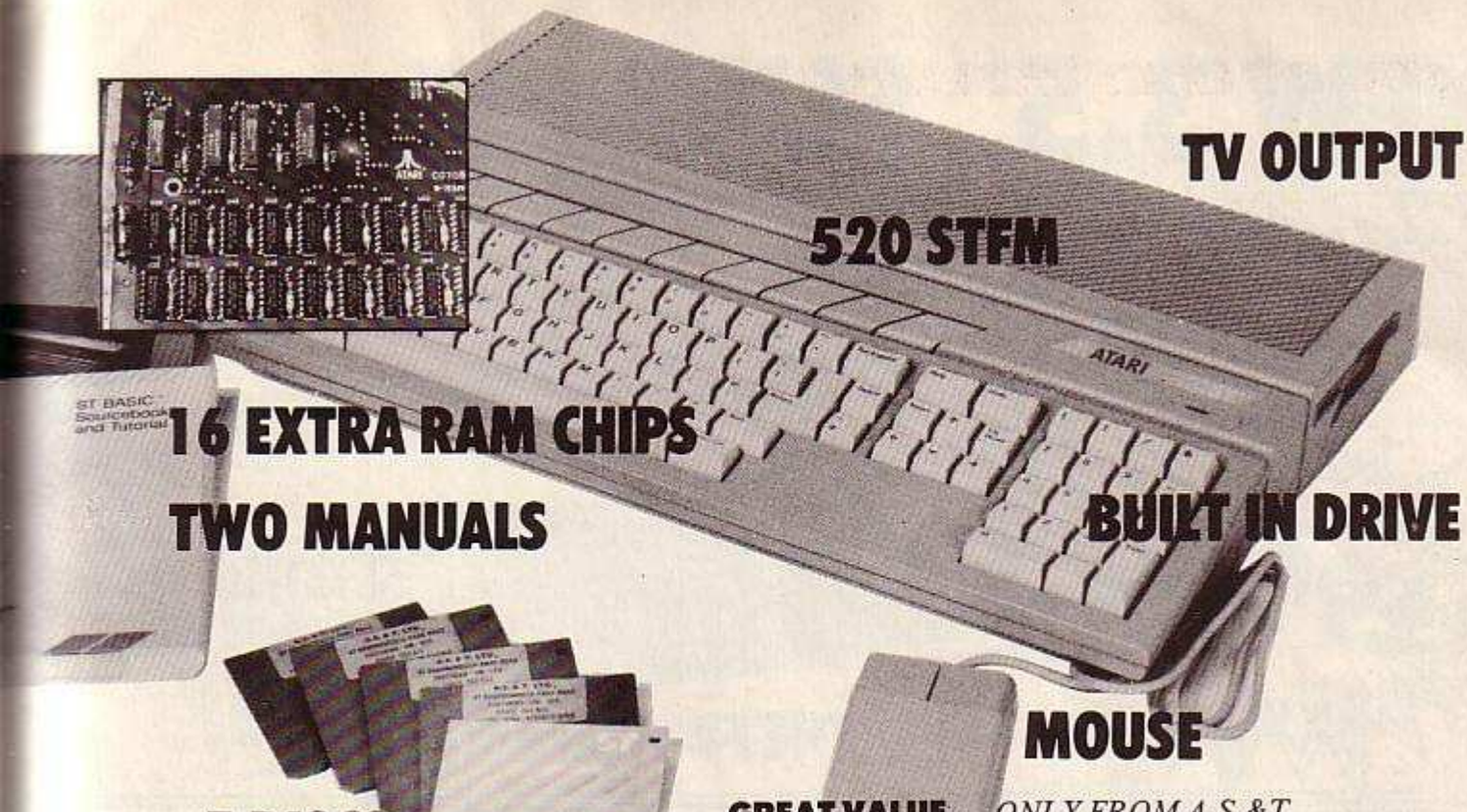

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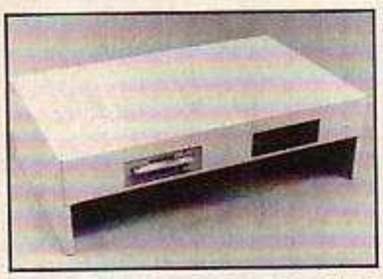

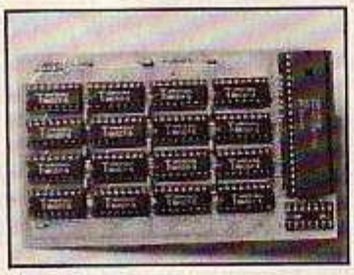

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ST Five-liners, Atari User, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

WRITE VERIFY OFF

from
VIJAY SISODIYA

THIS exceptionally clever and compact 5 liner creates a clickable program which turns the ST's write verify flag off.

Normally, the ST saves a file and then reads it back in to verify that it was stored correctly. If the verify flag is off, the ST doesn't read the data back in and therefore saves files at twice the normal speed.

You should only use this program with discs and disc drives which you know to be working correctly.

Line Breakdown

1 Opens the program file and starts the loop.
2 Reads in the data, places it on to disc then closes the file.
3-5 The machine code program data.

```
1   OPEN "R",1,"A:VERIFYOF.PRG",59:FIELD#1,59 AS BIN$:A$="":FOR V=1 TO 59
2   READ X$:A=VAL("&H"+X$):A$=A$+CHR$(A):NEXT:LSET BIN$=A$:PUT 1,1:CLOSE 1
3   DATA 60,1A,00,00,00,1A,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00
4   DATA 00,00,00,00,00,00,2F,3C,00,00,00,12,3F,3C,00,26,4E,4E,5C,8F,42,67
5   DATA 4E,41,31,FC,00,00,04,44,4E,75,00,00,00,02,00
```

PRINTER CONFIGURE

from
ADAM KENNEDY

IF you want to write programs which dump screens to Epson printers, you will have found that using the Printer Configuration desk accessory can take up precious memory.

This 5 liner, which quickly and simply defines the dots per inch to 960, can be included in any of your Basic programs.

Line Breakdown

10 The program's data.
20 Sets up the variables.
30 Reads the data into a%.
40 Obtains the start address of the a% array.
50 Executes the machine code and dumps a test screen.

```
10   data &h3f3c,&h0004,&h3f3c,&h0021,&h4e4e,&h588f,&h4e75
20   dim a%(6):ad=0
30   for i=0 to 6:read a%(i):next
40   ad=varptr(a%(0))
50   call ad:poke 1262,0
```

Graphics tools for the experts

Elliott Stein reviews Art Director and Film Director, two programs primarily aimed at the artistically talented

ART Director and Film Director, two powerful and concise graphic packages created by Andromeda for Mirrorsoft, are designed with the serious graphics artist in mind.

Taking a look at Art Director first, the advert claims: "Whether you want to create simple designs or complex professional presentations, Art Director has everything you need and more". This promise is kept.

Art Director, while lacking the simplicity and ease of Neochrome, packs in an incredible array of drawing tools.

Upon booting the program the Toolbox appears. Containing the workspace of the most frequently used functions, it can be conveniently removed or placed anywhere on the screen. Possessing most of the functions of Neochrome, the Toolbox offers many of the possibilities that Neochrome introduced and takes them a step further.

The Zoom function allows 16 different magnifications up to an extreme closeup of 12 by 20 pixels. The small zoom window on the Toolbox appears to be similar to Neochrome's until you choose to have the magnified portion of the work fill the entire screen. For detailed pixel-by-pixel work this function proves indispensable.

The Cut Rectangle feature allows you to cut any portion of your picture and rotate or reposition it anywhere on the screen in either the foreground or background.

Using one of the sample pictures on the program disc, of the Venus De Milo, I was able to cut out her left eye and paint on the screen with the pattern of her eye. With a little imagination this feature may be used to produce extraordinary and unique graphics.

Art Director's Paintcan function operates similarly to the one on Neochrome, allowing you to fill in entire areas in a selected colour or design. Using this function I was able to create entire backgrounds with the repeated pattern of Venus' eye.

Using Font, text can be produced in any colour, size, and in a variety of different types. After text is entered the mouse is used to drag it to any location on the screen.

The Airbrush operates like one used by a graphic artist, allowing accurate control of the speed, size of the brush, and duration. The longer you operate it over one spot the more pixels are coloured. It even allows you to use the cut rectangle pattern as one of the airbrush's sizes, as does Art Director's regular Paint Brush function.

The Draw feature permits single pixel colouring, useful for touching up areas drawn with the Paint Brush and the Ink Pen.

There is a handy Eraser to clean up selected areas of your pictures, as well as a convenient Clear Screen option to allow you to start again from scratch. Most commands, including Erase and Clear Screen, can be taken back by simply pressing the Undo key.

It's hard to believe that there are even more functions packed into the Toolbox. There's the Swap Page function (which allows one to work on two pictures at the same time), Vertical and Multi-Directional Strolling and the Paint Box.

With Art Director's Paint Box you can create eight different colour palettes with any combination of the 512 colours available.

The only apparent fault of the Toolbox is in the clumsy way used to switch from one function to another.

The Main Menu's file window features Load, Save, Delete, Quit, and Format (no, you don't have to leave the program to format discs).

The Easel Window allows you to copy pages as well as providing options for defining Grid and Window, two functions to aid you in creating precise and accurate designs. And, for an accurate vanishing point or horizon, you can put Set Perspective to work.

For those who miss the advantages of a photographic darkroom, you can choose a section of your masterpiece and selectively crop and blow-up any area to fill the whole screen.

Using the Venus picture I was able to eliminate her shoulders and the background and have her face fill the entire screen.

While still in the Easel Window, you can cycle colours to create a moving animation effect, as in Neochrome, and also quickly create moving circular or oval sprites. Using the sprite facility I was able to cut out Venus' lips and have them move and bounce about the screen like a rubber ball.

Next to the Easel Menu is the Modify Brush menus which allow you complete freedom in the handling of your pre-defined brush.

You can use the Block option to aid in creating straighter lines, Make the brush into a silhouette, flip it, cut it in half, double its size, turn or even rotate it.

Animating a jump with Film Director

Leaving the main menu to venture into the advanced menu's set of windows, we first come across the window which allows you advanced control in designing your brush. Besides re-designing former brushes by distorting, stretching and bending horizontally or vertically, we can cut precise circles, rectangles, squares, squares and ovals, either filled or clear.

The Tool Menu presents you with functions to use when delicately tailoring and adding fine touches to your graphics. Use Smear, Scrape or Melt to join or overlap objects on screen.

One of the other options, Outline, allows you to place a one-pixel wide outline around your entire picture to create the illusion of backlighting.

The Lines Window offers the drawing of straight or zig-zag lines, rays (several line segments from a single point), rectangles, circles, ovals and polygons.

A separate utility program on the disc allows you to convert Art Director picture to Neochrome or Degas formats and vice-versa.

Compared with Neochrome, Degas Elite and other similar graphic programs, Art Director comes out on top.

This versatile, well-documented, multi-purpose package will allow you to produce quality computer graphics on your ST with ease.

There are currently no programs available for the ST that can compare with Andromeda's second package. Film Director uniquely offers frame-by-frame animation in a simple (once you get the knack of it), fun and extremely rewarding way.

Though the animation is created from pictures produced from Art Director, Neochrome, Degas, or a video digitizer, Film Director is clearly a program on its own which takes full advantage of the mouse-operated Gem desktop.

On booting Film Director a demo animation sequence is played. A boy walks, runs, rides a bicycle, bounces a ball and plays tennis against changing backgrounds.

You can use these graphics to practice editing. All the elements that make up the animated boy, his arms, legs, torso, head (in various angles), as well as the bicycle, tennis racket, ball and other picture segments are stored on two screens. You can select the individual elements which can be cut, displaced, reflected, inverted, and enlarged.

The chosen elements are then brought to the Frame Editor, where you can construct, manipulate and arrange the boy in any fashion desired. Click on Copy in the Toolbox and the first frame of your sequence is recorded.

Editing the picture segments in Film Director

Mirrorsoft's Art Director in action

Now continue to move the object across the screen. Pixel by pixel, separately move the arms, the legs, the head and continue using Copy to record the changes in screen position. You may also use the Group Editor to move several sections of the boy simultaneously.

You have just created a film sequence. Now choose the Show Film option to view your film. You can adjust the projection speed and run forward, backward, or step-by-step.

Now you can pick a pre-created background or create a simple background of arranged geometrical shapes using the Pattern Editor. Using Step allows you to set the boy precisely through the background.

You can add text to your picture, create other sequences up to 2,000 frames long and edit the sequences together, scroll through many backgrounds, use sound and music, finely edit individual frames as well as whole sequences, perform minor touch-ups to the graphic images, and alter the colour.

For those who want to show their masterpieces outside their computer your finished film can be transferred to a standard video recorder.

Like Art Director, Film Director will not create innovative, unique and brilliant works of art by itself, it will only provide you with the tools needed for you to create them. Hard work, commitment and dedication are needed to use these programs to the full.

Both Art Director and Film Director are very worthy creations which will probably be used as the comparison for all future graphic packages.

Product: Art Director
Price: £49.95
Product: Film Director
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Resourceful little gem

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Tel: 07357 4335.
Price: £39.95

IF you have ever copied a Gem program from one disc to another, you may have found that you also have to copy the program's resource file. This contains the design for the menus, alerts and dialogs which the program uses when it is running.

Resources are loaded just after a program is run and are stored as a separate file so that the resource can be changed without altering or re-compiling the program. This means that the program's version number can be easily changed, or the program can be converted to, say, French.

Resources can be constructed in two ways, by hand or with a construction program. A resource is made up various trees of data – a tree can be a menu, alert or dialog.

The different trees contain objects such as text, buttons and icons. Imbedded in each is such information as the size of the tree when it is displayed and the coordinates of each object in that tree.

Building resources by hand is not only laborious, but is also virtually impossible for the novice programmer. A much easier method is to use a construction program. Until now these have only been available as part of compiler packages, such as Megamax's C.

K-Resources from Kuma is the first resource editor which has been made available on its own. It can build resources for use with anything from C through Modula II to Fortran 77. With some work, these resources can also be used with programs written in Fast Basic.

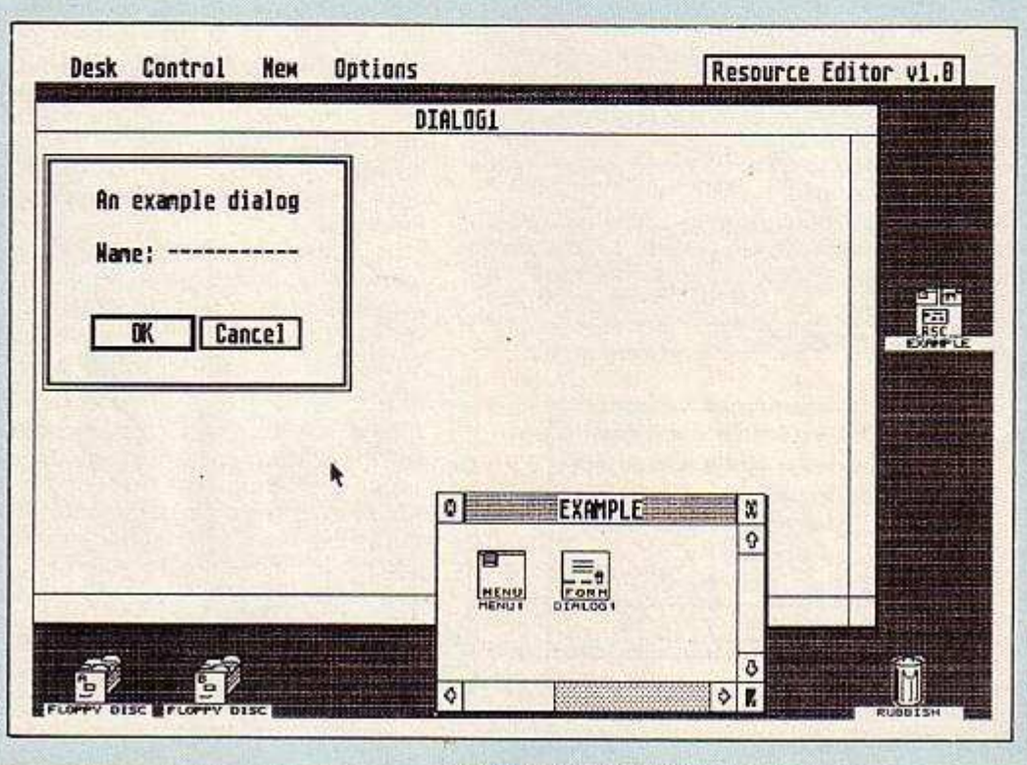
Constructing and editing resources with K-Resource couldn't be easier. The program is fully Gem supporting and just about everything is controlled using the mouse. Construction a dialog, for example, is merely a matter of sizing it using the mouse. Objects such as editable text fields, strings, buttons, icons and images are chosen and placed with the mouse.

If you were using one of the other resource editors you would have to return to the desktop and run your program to see what each of your trees looked like, then return to the editor for further editing.

K-Resource saves you all of that with its test option, which allows you to see what menus and dialogs will look like. You are also saved the bother of using a separate icon editor program, since K-Resource has this feature built-in.

K-Resource's 32 page manual is up to Kuma's usual standards. Each menu option is examined and a detailed example shows how to construct a dialog. A section at the back tells you how to convert your resource files if you have been using other resource editors.

Kuma has the habit of releasing second versions of its programs – K-Spread was improved and became K-Spread II. I can't see how K-Resource can be improved though and it definitely gets my vote for the serious programming utility of 1987. ■



'K-Resource in action'

Reviewed by Andrew Ralston

Three runners for the Comms Stakes

Ray Jackson reviews three comms packages for the ST

MORE and more ST owners are using their computers to communicate with distant bulletin boards and professional services such as Micro-Link and Prestel.

To join in, you need a modem (which sends data down a phone line) and a piece of communications software. It is actually possible to use the VT52 emulator desk accessory provided with your ST for communications, but this leaves a lot to be desired in terms of flexibility and facilities.

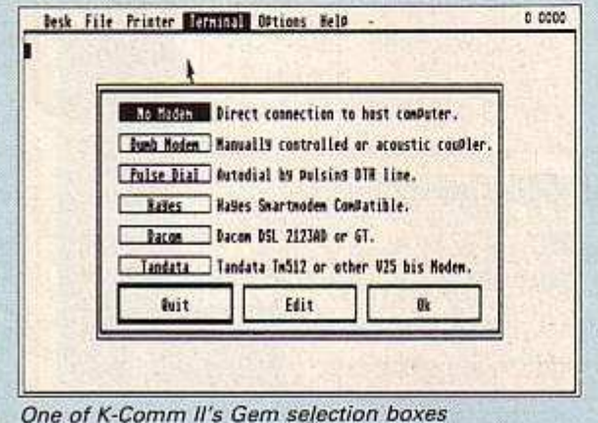
A number of communications software packages have appeared on the market for the ST, including Antic's Flash which was reviewed in the October 1986 issue of *Atari ST User*. This review covers three more: K-Comm II, Fastcom and PC-InterComm.

The first is a substantially enhanced version of the original release and now includes a viewdata (Prestel) terminal program known as K-View. K-Comm II presents you with a full-width screen, capable of displaying 24 lines of 80 characters, and a menu bar. All the program's facilities are available from the menus, including several help dialogues which repeat the information given in the manual.

The terminal configurations allow selection of a simple teletype mode, user definable terminals or fairly good emulations of DEC VT52 and VT100 terminals. The most significant omission from the VT100 emulation is the VT100's standard 132 column mode.

Two types of session log are provided. The first is automatically saved on disc and can be turned on and off by the user: The second, Receive, is intended for Ascii file capture. There is an option to print the session log as it occurs – a large buffer allows the printer to catch up without slowing the activity on the screen.

Xmodem protocol is also provided which allows error correcting transfers to and from bulletin boards which support this standard.



One of K-Comm II's Gem selection boxes

Program: K-Comm II
Price: £49.95
Supplier: Kuma, Pangbourne, Berkshire
Tel: 07357 4335

Program: Fastcom
Price: £49.95
Supplier: Atari, Atari House, Railway Terrace, Slough, Berkshire.
Tel: 0753 33344

Program: PC-Intercomm
Price: £124
Supplier: Silica Shop, 1-4 The Mews, Hatherley Road, Sidcup, Kent.
Tel: 01 309 3111

Xmodem is particularly useful on noisy lines because it allows for retransmission of corrupted data packets and is essential for transfer of "clickable" programs.

K-Comm II's facility to display text files from the disc is marred by the fact that the text is displayed in a window that can be resized and vertically scrolled, but not horizontally scrolled. Thus all characters in excess of about 78 are inaccessible.

The package does have some nice touches. It is possible to pause screen output by moving the mouse to the right of the menu bar and resume by dropping it into the window again. There is also a facility to snapshot the screen and redisplay it when required, which is useful for recording online menus.

K-Comm II can be configured for a variety of modems and is capable of auto-dial and auto-answer functions. And unlike the other two packages it can dial with the low cost pulse dial type modems.

In short, it provides a fairly full set of capabilities, including some not found in competitors in its price bracket. My only criticism is that the user manual would not be easily understood by a newcomer to communications.

FASTCOM is a recently released package from Atari which has much in common with K-Comm II, and a viewdata facility built into the main program.

But it makes more use of Gem than does K-Comm II. The main communications display on the screen is a Gem window which can be resized and moved in the normal way and can be scrolled in both directions. This allows you to look at recently displayed output but does not allow a full 80 columns to be viewed at once. As many online services assume 80 columns this can be rather inconvenient.

Many of Fastcom's options are selectable by

either Gem menu or one of nine icons displayed in a column on the left of the screen. These are still visible when the communications window is opened but can be covered by resizing and moving the window or clicking on the fuller.

The manual is clear and doesn't assume an experienced reader. Many of the facilities in Fastcom are easier to use than K-Comm, particularly the selection of differing setups for different services. However, some detailed options are omitted, such as the relationship between carriage and line feed characters.

Facilities are provided for both Ascii and Xmodem up and downloads. The Xmodem option is provided with a more informative display than K-Comm to allow the monitoring of progress. The Fastcom Xmodem facility has not yet aborted a transfer for me, whereas K-Comm has given up several times on noisy lines.

One significant advantage of Fastcom is an online editor facility which allows the editing of text files for transmission, and includes search and replace capabilities.

Fastcom does not provide full terminal emulation for either VT52 or VT100 and does not redefine the keypad to send special codes. It does allow four of the function keys to be defined as text strings for rapid entry of often repeated commands.

One operational problem I have encountered with Fastcom is in the mechanisation of the Ascii file download facility. Once the download option is selected there is no way to send anything to the host system to initiate the transfer, yet if the host is told to transmit before selecting the menu option then the initial few lines will be lost. However, this restriction is not disastrous as the normal capture buffer can be used to catch text files.

Fastcom seems to get into trouble with long transmissions at 1200/75 baud with the capture file recording on. It seems that the program cannot quite keep up and eventually the input buffer overflows causing a total lockup of the ST. This only occurs after several minutes of continuous transmisssion and can be avoided by occasionally using the hold screen option to let it catch up.

An interesting feature of Fastcom is that it can handle any combination of transmit and receive baud rates, rather than just 1200/75 or 75/1200 as provided with K-Comm II.

Fastcom's viewdata mode allows access to Prestel with its colour character graphics. It begins with a monochrome only display using only part of the screen – the remainder is filled by buttons and icons which allow easy access to common Prestel options and an on-screen numeric keypad. The right mouse button toggles between this and a full screen colour display. Fastcom also has a noticeably faster screen update for viewdata screens than K-Comm II.

Overall Fastcom provides some useful features which are not included in K-View. These may be regarded as unnecessary frills by some users and both packages provide all of the necessary basic functions. Fastcom allows both viewdata and text modes to be used in the one program.

If Fastcom had a full 80 column display it would be a winner – I found it seemed just a little easier to use than K-Comm II. However, K-Comm does offer some extra facilities not included in Fastcom.

PC-INTERCOMM is a package from Mark of the Unicorn which has been converted for the ST from a very successful product on the IBM PC. It is primarily sold as a terminal emulator for DEC VT102 terminals (an extended version of the VT100).

However, it includes some features not found on a standard terminal which make it particularly suitable as a communications package to a remote computer. These include file transfer, log-file and modem control capabilities.

PC-InterComm makes no use at all of Gem graphics and is a purely text based product. The ST has one more screen line than the VT102 standard and PC-InterComm uses this to display a status line at the bottom of the screen.

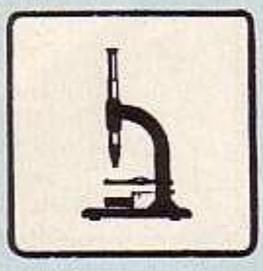
All configuration options can be accessed through the ST Help key which displays a text menu of topics, many of which call up more detailed sub-menus – easy to use and mostly self-explanatory.

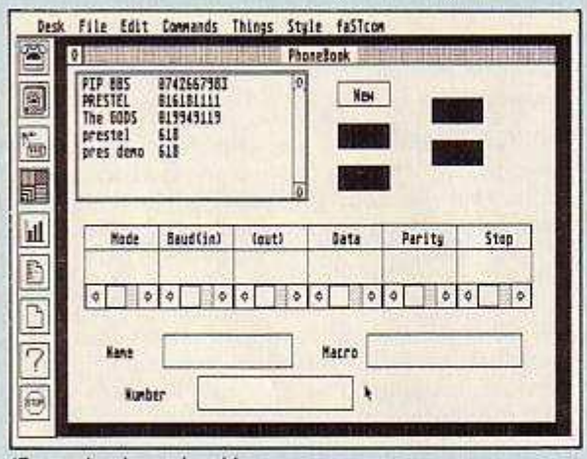
In addition a small set of often used functions is available through the Alternate key in combination with a character key. The ST function keys can each be defined to send a character string and therefore can be used for frequently used commands.

File transfer modes available with PC-

PC-InterComm main menu

Feature	Fastcom	K-Comm II	PC-InterComm	Flash
Full 80 columns visible	No	Yes	Yes	Yes
VT52 emulation	No	Yes	Yes	Yes
VT100 emulation	No	Yes	Yes (VT102)	Yes
1200/75 baud	Yes	Yes	No	No
Other split rates	Yes	No	No	No
Text Editor	Yes	No	No	Yes
Auto dial (intelligent)	Yes	Yes	Yes	Yes
Auto dial (pulse)	No	Yes	No	No
Session log to disc	Yes	Yes	Yes	Yes
Session log to printer	Yes	Yes	Yes	Yes
Ascii file transfer	Yes	Yes	Yes	Yes
Xmodem file transfer	Yes	Yes	Yes	Yes
Kermit file transfer	No	No	No	Yes
User defined keys	4	10	20	20
ViewData mode	Yes	Yes	No	No
VidText (Compuserve)	No	No	No	Yes





'Faston's phone book'

InterComm include the Ascii and Xmodem protocols provided with the other two packages. It also supports a protocol known as Kermit which is very common on DEC and IBM computers.

An extra mode is provided for transferring files to and from another ST which is also running PC-InterComm. This allows some of the file details such as exact length and creation date to be preserved. One useful facility provided in the file transfer options is to specify the commands to send to the host to cause the file transfer to begin and terminate.

A history buffer is automatically kept by PC-InterComm which stores all text sent by the host computer. This history can be reviewed on the screen or saved to disc manually or automatically. In addition it is possible to save the current screen to a disc file.

All options selected on PC-InterComm can be saved in a set up file which can then be loaded each time a particular service is used. As with K-Comm's VT100 emulation, PC-InterComm does not support the DEC 132 column screen mode, which seems an unfortunate omission for a product billed as a terminal emulator.

It does support double width and double height characters which are omitted from the K-Comm emulator. No split baud rates are supported, so 1200/75 operation is only possible with a speed buffering modem.

The small, ring-bound manual is well-written and does include a chapter for beginners.

PC-InterComm does offer a few unique features in addition to those provided by other packages, particularly the Kermit file transfer, and it does have a fairly professional feel in operation. It is, however, well over twice as expensive, which will probably make the private individual think carefully about the need for the few additional features supported. ■

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