

Page!

Atari Users Magazine

Issue 24

£1

November/December

INCLUDING STAGE FOR ST USERS

MUNCHY MADNESS
OUR BEST GAME YET?

AUTOCHECK
LOOK AFTER YOUR MONEY

IN DEPTH REVIEWS

PRINT SHOP COMPANION
THE SLAVE
RAMBIT
BALLYHOO

... and more!

STAGE

The PAGE & ST section

DISKS

and
all you need to know
about them

CARTRIDGES

and how to make them

Reviews

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"The magazine for the
dedicated Atari user"

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also includes on readers' support in
submitting articles and programs.

The aim is to explore ATARI
computing through the exchange of
information and knowledge. We will
endeavour to pay for articles and
programs where appropriate and we
hope that readers will enjoy seeing
their work published. In turn we
hope that other readers will learn
from the articles and programs
submitted and increase their
enjoyment of ATARI computing.

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Page Atari Users



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RALLY ROUND!

Early September was quite a depressing time for owners of Atari 8-bit computers for the Personal Computer World Show turned out to be the place at which the grave illness of this particular patient became apparent. Many seemed to feel that the illness was terminal. The cause was easily established - neglect. Everyone has known for years that the major U.K. software houses have neglected the Atari but now that malaise has spread to Atari themselves and, worst of all, to the public. If the Atari 8-bit line is to die then it will be a strange irony that the major contributors to its death will be the people who need it most, you and all those other owners who don't support those companies that are continuing to support the Atari.

As reported elsewhere, the representation of the Atari 8-bit products in the 'Atari village' at PCW was dismal but three companies (including ourselves) did show support for the 8-bit Atari and invited support from the public. Did they get it? I can't speak directly for the others but I know that we fared much worse on the 8-bit side this year than at last year's PCW despite being in a special Atari only area this time. If we did not have ST products available we would have lost heavily and would have decided there and then not to do another exhibition. I suspect that others supporting only the 8-bit computers probably felt the same. If you came along and brought something fine, but if you must take your share of the blame if some of the exhibitors decide not to bother next time.

The thing I don't understand is that there are at least ten times more 8-bit Ataris in this country than ST's yet the ST commands ten times the interest at the present time. The reason is fairly obvious when you think about it, the 8-bit Ataris are no longer 'new'. They may still be the most powerful, affordable home computers 'out there' but they are no longer new and our witsers clamour after the new. There is of course room for the established alongside the innovative, if the established is good enough which in the case of Atari it is, provided that companies supporting the established line can make a living. A lot of companies who have supported Atari in the past have done so with their hearts leading their heads but at some stage the line has to be drawn. Only you and your hundreds of thousands of Atari owning friends can determine whether this happens.

Enough. You must have the message. If you want companies to keep supporting you, you must support them. There is another Atari Show coming up at the end of November. Make sure that you go along (and take as many non-PAGE 6 reading Atari owners as you can find) and show your support. If you find it disappointing, ask the organisers why they didn't get quite 8-bit exhibitors and write to those you know who didn't exhibit and ask them to come along next time. It's a two way process, if Atari owners don't support us, as exhibitors, we just cannot, by the laws of economics continue to support them.

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New ST coverage!

STAGE

This issue sees the start of a separate section for the ST which you will find in the centre of the magazine. The reasons are complex and varied but in the end I feel that we can best support both types of Atari owner by going in this direction. We do not intend to neglect either and look forward to receiving as much reader support for STage as we have done, and will do, for PAGE 6 as a whole.

One piece of advice for ST owners, who may want to turn to STage - read the rest of the magazine as well. Many of the software reviews, such as those for Infocom adventures, will be relevant to the ST and you might miss out. 8-bit owners should not neglect STage either (and certainly not, as one correspondent suggestingly threw it away!) for you may well decide that an ST would be a welcome present after all. I know for a fact that many of the long term Atari owners own, and use, both machines and rightly so. They will, hopefully, find something of interest from cover to cover.

TRANSATLANTIC BBS

The Birmingham User Group claims a first for a British Atari BBS by going Transatlantic! Messages may be sent to or received from Canada at no extra cost to the user.

Outgoing messages are stored as received until over a week are transferred to a bulletin board in Canada called TASK FORCE. Messages from TASK FORCE BBS are also transferred to CHARRS and the transfer takes place every Saturday morning. There are a number of messages in the Canadian message base from computer fans in Canada, and they would like to get in touch with users in the U.K. Anyone who logs on to CHARRS may reply to these messages, once they have been registered as a user. The telephone number of CHARRS is 021 430 5761.

NEW EPYX JOYSTICK



Software producers hope have leapt into the peripherals market with the new revolutionary style joystick pictured here. They claim that the stick will increase any gamers' high score and have launched a world wide search amongst users groups to find out how well the stick performs. It is certainly very positive and superlative any other joystick tried at PAGE 5. Main drawback for some is that it is for right handed players only. Unfortunately we don't know the UK availability or price, but please your retailer and he should be able to find out.

PAPERCLIP EXPOSED!

If you recall our review of Paperclip in issue 22 you may remember a comment that the review copy did not have the 'special' files on the disk. It seems that it was just the only copy!

Atrolsoft have admitted that the 'Special Version' including various printer was never actually on the disk. James Peate, Technical Consultant for Atrolsoft explains "Due to an error in the duplication stage of this program, the special version was omitted. We apologise for this and ask anyone who has purchased this version to return it so as for immediate replacement."

If you have recently purchased PaperClip and find that programs mentioned in the manual are not on the disk, return it to Atrolsoft, 64, Long Acre, Covent Garden, London, WC2E 8JH and they will do the decent thing!

More NEWS!

2 BIT SYSTEMS: MUSIC PRODUCTS FOR THE 48K ATARI

REPLAY

Replay is a complete sound sampling system that allows you to store and reproduce any file as WAV.

Features:

- Samples with resolution from 8KHz to 16KHz
- Sampled through "Hi-Memo"
- Music samples to be edited via our Edit programs
- Supported instruments, 16-step memory bank
- Records from MP3 or external recorder

Also included in the REPLAY package (available separately):

Custom Digital drum synthesizer (performance required), allows you to create your own Drum patterns using 4 samples drum sounds.

Optional Sample Sample Separator lets hardware musicians extract files to play back only sampled sounds (drum, guitar, keyboard, etc.)

prices:

REPLAY system (hardware, software, together with optional MP3 file), £29.95.
CUSTOM DIGITAL samples only £14.95.

MIDI MASTER

A full featured MIDI interface for your ATARI, allows you to take full control of synthesis, dynamics etc.

Features:

- MIDI synths (able to easily connect)
- 16 Track, full time sequencer with tempo controller.
- "Carve-C2" centre music editor (allows you to edit and store sounds for 16K-160K)
- Yamaha DX 5000 12 voice mixed table
- Music playback program (allows you to play back from Music composer or MIDI via MIDI)

With this you will be producing other music editors for different systems, so if you can't afford synth, get in touch.

OPTIONAL MP3 SEPARATOR

16 channel MIDI MASTERFILE includes a 16 track sample separator and a wave editor.

prices:

MIDI MASTER interface plus software £27.95.

PERCUSSION MASTER

A high quality professional drumkit for the Atari.

Features:

- Customised look and feel to ensure high quality sound.
- 8 Synths from sounds
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- Capability to load new drum sounds from 16K-160K
- Includes enhanced version of REPLAY software, allowing REPLAY to access sounds with a far greater resolution.

- 2 Channel processors
- 16 step mixer
- Auto output to file

PRICE:

PERCUSSION MASTER hardware + software £29.95.

COMING SOON!

ST REPLAY +

ADDITIONAL

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Looking hard and long, Les Ellingham really did find Atari software at the PCW Show

It has to be said that the PCW Show 1988 was a great disappointment for 8-bit owners. The Atari 'village' was dominated by the ST and Amstrad themselves showed little interest in the 8-bit models, devoting more space in fact to the 2860 Y&C games machines! Still they did have the long promised 50 volume card printer interface on show and very good it looked too. No price or availability though. This really was the highlight as far as Atari themselves were concerned.

AROUND THE ATARI VILLAGE

A round up of the Atari village is easy. Only Rod Rat Software and 2 Bit Systems were predominantly supporting the 8-bit machines. Rod Rat in particular deserve your praise and support for coming into and trying to expand a market that the likes of English Software have deserted. On show were *Technician's Dream*, *Peace Happens*, *Screaming Wings*, *A Day At The Races*, *Freaky Factory*, *Rocket Repairman* and *War Goggles* many of which are in the arcade vein. Prices start at £1.99 on cassette and £4.99 on disk. Their forthcoming schedule of releases include *Atari Drivall* a space arcade game, a Grand Prix racing game called *Demolition Derby*, *Escape From Planet X* which is three arcade games in one, a multi screen arcade adventure called *Treasure Island* and two more arcade games, *Dragon's Breath* and *Domain of the Undead*. Clearly Rod Rat are now the most predominant Atari 8-bit software house in the U.K. 2 Bit Systems had *Replay* and *DigDug* on show which were reviewed last issue together with *Mail Mission* for my 486 Atari. Featuring a 8 track sequencer and *Music Player* for AMS Dis it retails at just £17.50. Also shown was *Perseus Hunter* a digital drum machine that using actual digitised sounds to enable you to create your own songs. This retails at £29.99.



LET'S LOOK ELSEWHERE

It was not all gloom and despair outside the Atari village though. In fact there was more 8-bit support outside the Atari area than in, although you had to look hard to find it.

Several companies with established 8-bit products were present such as Activision, Activision and Llamasoft but amongst the myriad stands were one or two that will be supporting Atari for the first time.

Bytebit Bus Software, a long established company for other microes will shortly produce their first Atari title with *Starquake* an arcade adventure on disk or cassette at £11.99 and £7.99 respectively.

Granite Graphics had an excellent looking *Marble Madness* type game entitled *TrialBlazer* which should be on soon together with *Footballer of The Year* in which you play an up and coming professional footballer fighting your way to the top. Both are £9.99.

Mastrotronic have a couple of new £1.99 titles under their Entertainment USA banner called *Hang, Set, Spin* and *Vegas Poker* while Paradox had another budget title called *War Hawk*

which one avid arcade freak told me had the best music he had ever heard!

Revised are now bringing adventure lovers something they have been crying out for for years, Level 9 adventures on disk! Already available is *Jurassic Darkness* and coming along is *Mirrors Dreams* both of which are those adventure compilations of existing Level 9 adventures. Also expect soon the Robin version of the much acclaimed ST adventure, *The Peewee*.

Atari Software are marketing *Voice Master* in this country. A speech synthesiser, voice recognition and voice help hardware add-on that sells for £39.99. Reviews on other machines have been excellent, let's hope that the Atari version lives up to them.

Tynesoft have now acquired the rights to some of the Scott Adams adventures and will be re-releasing those soon. *Savage Island I & II* are already available. They are also one of the few converting established Commodore titles to the Atari with *Jet Set Willy I & II* already available. *Camelot* is a multi-level arcade game and *Dreammaster* is another 'delicious Arnie package' for budding Atari artists to look out for. More Atari titles are promised.

Prism Software look out for *Monomist* an interactive fiction adventure and *Leather Goddesses of Phobos*, the first in a new Comedy adventure line. Only one new title is due from Activision which is *Teachdown Football* and *Mirrorsoft* are due to release a new flight simulator, *Spitfire 48*. Blue Ribbon Software are to expand their range of budget titles with *Atari Phoenix*, *Diamond Mine II*, *Bar Billiards*, *Condition Red*, *Jup* and *H-Dravid*.

Budget software is all the rage and Prism Software Corporation seem to specialise in buying out old or delayed titles for budget release. Their trade catalogue features no less than 67 Atari titles! Some is pretty obscure but many are up to date. If your dealer tells you there is no 8-bit software around, don't believe him.

Finally I picked up an Ocean magazine calendar/whore release schedule - not an Atari title is right?

There will be a decent amount of software around in the coming months but I suspect that your retailer will need pointing. Power hand!

KEEP 'EM LONG!

Dear Les,

Just a note to express my support for the comprehensive 'heavy eggs' reviews. John Davison's excellent review of Flight Simulator II prompted me to go out and buy the game together with Computer's 40 Great Flight Simulator Adventures. The game lived up to all expectations just prior to reading the review. I had not even considered it in view of the cost. I suspect that the Ultima IV review may do the same and a glance at the Gaming Deluxe article indicates that a modem could also be on the Christmas shopping list.

Any chance of similar treatment for SST's Wizards Crown which looks interesting, but is it worth the cost?

Colin T. Cooper,
Leigh-on-Sea.

Although I had some reservations about readers interest in some of the longer reviews, we have had several letters like this so, providing our contributors can keep writing them, we'll keep publishing. Many readers complained that the short copy reviews published in other magazines gave too little information to enable them to judge the worth of a piece of software.

DOES 3 STILL ALIVE!

Dear PAGE 6,

In the past I have seen lots of letters complaining about the DOS 3 system. Is there anything wrong with DOS 3 because I recently bought a 1090 disk drive which comes with DOS 3 and want to know if I should buy a copy of DOS 2.1?

Simon Hall,
Southampton.

Yes.

TAPE TO DISK

Dear Les,

I read with interest the letter from B. Hume of Hull in issue 22 on tape to disk transfer. I had the same problem and over the years have transferred many cassette programs to disk. These tape programs fall into three main categories: A) Auto-boot with no header, B) Auto-boot with a single header and C) Auto-Boot with multi-headers.

The first are easily transferred by commercial programs. I use the tape to disk utility in Adventure International's Diskay. The second group have custom written loaders to support program loading and screen information during loading of the main program. They usually contain the IOCB

(and even D-DE) calling routines and often 'load' using non-standard data blocks. These loaders have to be modified to support disk loading and (but not always) to load the main program into RAM for transfer to the appropriate disk sector. These loaders also contain various routines for screen protection. The third group are difficult to modify and often use sophisticated byte handling/ changing routines for screen protection. With these, if it is a 'good' program I suffer the long tape loads.

To cater for the second group I use two Assembler source code routines (one for tape, one for disk) which are customised to load first the header and then (if possible) the main program. The header program is then modified and

the main program loaded into RAM. The header and main programs are then transferred to the appropriate sectors on the disk. DOS cannot be used as you have to write to specific sectors, it also goes in the way of header and main program so I try to load them into their correct place in RAM. It sounds nice but like this but it usually takes 3 to 4 evenings at about two hours an evening!

M.S. Silvester,
Aldershot.

Didn't I say that there was no copy answer? If you can understand the above you should have no problems. If not then you have two alternatives, have a lot more about your Atari or put the article on while the tape loads? I hope that some of you at least can work it out.

MORE ON MONUMS

Dear PAGE 6,

Can you give me some advice on buying a modem? I would like to be able to contact a friend in America, access Bulletin Boards and possibly play games such as MUD or GODS. I have seen many American modems advertised in ANTEC and ANALOG but don't know if they would work in Britain. Is the Miracode modem suitable for the above purpose?

Alan Whalley,
Banbridge.

Notably *never* about American modems, they will not work with the British telephone system. Also modems are not advertised in this country and all what you mean, the only thing you need to check is whether the support the local rate you require. Obviously a modem connected to 2400 baud cannot access a system which runs at 1200CTS. Many modems, including the Miracode Technology modem, have detachable hand wires. Another

point to watch if you want to access *Prozac* or similar 1200/75 systems is that the 250 interface cannot handle *opto hand wires* to you need another interface. Finally some systems such as MUD may require special software and if they don't produce an *ascii* version, then you are stuck. You will need to write to the companies concerned to check.

Probably the best system for the beginner is either the W5400 or W5400 modems with the *Dartmouth* interface and *Multi-Paradise*, or *best* you will have everything you need apart from experience!

ATARIWRITER VS PAPERCLIP

Dear Les,

There has been a lot of correspondence elsewhere concerning accessing the International character set on the 1020 printer with Atariwriter. I had no problem solving this with the CTRL-O function of Atariwriter, however, having read your

review I decided to purchase Paperclip and I am now faced with the same problem! Although Paperclip has the ability to convert Atariwriter files to Paperclip, in doing so it ignores all CTRL-O codes and therefore seems to be no way of accessing the International character set. If you or any of your readers can help I would be grateful.

Marion R. Pearson,
Cardross.

No problem! What you have to do is define your own printer driver using the utility supplied with Paperclip. There are four special keys available for you to use as you wish and you simply define one of these with the commands that you use to use with CTRL-O. Whenever you require the International character set just use the key you have defined in place of CTRL-O. You can even use another key to define the *U* sign and have it printed with your own command! Full details of setting up your own printer driver are given in Appendix D of the Paperclip manual.

DESIGNING
CIRCUITS

Dear PAGE 8,

Could you tell me if there are any programs for the 800SL which will enable you to define electric/electronics symbols to design circuit diagrams and then save them on disk or dump them to an Epson printer.

Andrew Evans,
Newspaper

I don't know of any commercial programs, but if you know how to redefine the character set, you can easily create your own symbols. By using a character set editor and a screen dump utility there is no reason why you can't get excellent results, but it will require some programming knowledge on your part. There are several public domain utilities available which would help. An alternative, depending on what printer you have, is to redefine the characters in the printer although this would make actual design on the screen much more difficult. It can be done, maybe another reader has written a program that exactly fits the bill.

MORE ON
PRINTERS
WANTED

Dear Lee,

I must agree with Alan Horner in Issue 24. I am 60 years old and having bought an 800SL some time ago was horrified by the lack of information given by Atari. I found PAGE 8 in issue 19 and since then it's been so much easier. People like myself have no-one to turn to for help and information, if we were of school age we could turn to teachers or other youngsters with whom we could swap knowledge and learn, this being older we rely on magazines such as PAGE 8.

I have learnt from your reviews and excellent contri-

butions. I am now using a DEXE and Superscript and have bought a 1027 printer. I would have liked a better quality printer but what interface do I need? What is a Printer Driver? Is it possible that one of our friends who contribute so much for our knowledge and pleasure could advise us on hardware, peripherals and such things with a series of articles?

Thank you for your efforts on our behalf, we do appreciate them.

C.P. Anderson,
Glasgow

There are still many, many things that Atari owners would like to know about or illustrated by the letter. Unfortunately many articles, especially those which criticize or compare different third party products, are extremely time consuming and often difficult to get together. Few people have access to more than one printer. We would like to print comparative articles but don't have the resources to spend a couple of weeks in preparing just one article. If any readers have access to a friendly retailer or the like who could provide information about different printers and they feel confident in writing an accurate and detailed report we would be delighted to publish it, they agree!

XL TECHNICAL
REFERENCE
NOTES

Dear PAGE 8,

Could I just ask you one favour? Do you know where I can get a copy of the Technical Reference Notes for the 800SL. I need them for details of the parallel bus, but I have been informed that the book is out of print. So much for Atari's continued support of the 8 bit machines.

Jim Dorell.

I am not sure whether the XL

version of the Technical Notes was ever in print? It was certainly mentioned when the XL came out and, while correctly prepared for publication, I do not believe that copies were put out. The only reference that has been published on the parallel bus so far as I am aware is a four part article in AMTIC which commenced with Vol 3 No 5. If you can get hold of these magazines, your problem should be solved.

As a matter of interest I have been told that the Technical Reference Notes for the 400/800, which are entirely relevant to the XL/XE, have been republished and are available from Atari although they don't seem to be pushing them very much. Ask Atari or your dealer (preferably) if you can buy a copy.



Write to READERS
WRITE, P.O. BOX 34,
STAFFORD, ST16 1DR

SAFE
EARTHQUAKES

Dear Sir,

In the past I have found it quite difficult to make the screen with text or graphics to create a good earthquake effect, but after reading your articles on Douglas Lee keyboards, I found a short routine to safely or violently shake the screen, so I would like to share

ASSEMBLER
EDITOR
SOLUTION

Several readers requested to Cliff Winstan's letter in the last issue about problems of loading an object listing with the Atari Assembler Editor. Many received a copy of a letter from our Member Tom of Atari and Alanine himself dropped the information into our Mailbox. No letter is:

All references to LOAD in the manual should be replaced with the following program

```

100 TRAP 255
110 OPEN #1:AO,"C:"
120 GET #1,X
130 GET #1,X
140 GET #1,X
150 GET #1,Y
160 A$=TAB(=256*Y)+X
170 GET #1,X
180 GET #1,Y
190 A$=A$+256*Y+X
200 A$CURL=A$+START
210 GET #1,X
220 FOR A$CURL,X
230 A$CURL=A$CURL+1
240 IF A$CURL=A$+A$END
    THEN GOTO 210
250 GOTO 140
260 CLOSE #1
270 END
  
```

The program is presented for ease of understanding but use of course be combined to a fine tune providing the GOTO references are amended.

with other readers.

By changing the last digit in the FORK statement, you can change whether the screen shakes very softly or violently.

Mark Hedford,
Warley, W. Midlands

```

81 10 GRAPHICS 0:POKE 700,1
82 10 T="RESERVED FOR TEXT OR GRAPHIC PIC
    TEND"
83 10 BL/PCUR:EMMO*256:PCUR 0:0
84 10 FOR 0=0,255:GOTO 86
85 10 FOR 0=0,51:GOTO 84
86 10 GOTO 10
87 10 END
  
```

AUTO CHECK 4-0

Requirements 48K Disk



A CHEQUE BOOK UTILITY PROGRAM

by Peter Franey

Not another cheque book utility! Well here with me and I hope you will find this one worthwhile. The program started two years ago as an after thought but evolved into quite a comprehensive program. The typing will be hard and the start up procedure will need care, but I assure you, it will be worth it. The main program display shows tasks every hour of frustration, to get right. If I have worried your appetite then read on. If you are a cynic use them I apologise, possibly with a program for the future?

PROGRAM OVERVIEW

If you don't want to pay out in excess of thirty pounds for a commercial financial program to handle your cheque book(s) or are tired of six programs and multiple disk swaps then Autocheck 4.0 will come to your rescue. The program started because I bought a copy of the Home Accountant and found that it never displayed my current balance. It was too keeping records of up to five cheque books and credit cards but the printed reports were messy. I cannot imagine why they think the average person needs a real worth statement, after all we are not all jet setters are we?

Autocheck is a stand alone program which handles up to five cheque books, offers sixteen user defined categories for expense and eight for income and provides printer support. Each cheque book may use a different set of categories. All the categories are displayed on the main screen, and the current balance is displayed at all times. Complex multiple file handling allows the program to change from one cheque book to another. The name and number of the current cheque book are displayed on the main screen. Each cheque book file may be used for a different person, but can also be used for different years on one account. It's up to you how you name them.

As Autocheck is a stand alone program it uses a considerable amount of memory and, fully dimensioned, takes just 150 bytes free on a 48K machine. When using this program ensure that you do not boot the 800 interface module, if you have one, or there will not be enough memory. If you have a single drive system, configure DOS properly for one drive. From basic Type `PKCH 1803.1` and press return. Then return to DOS and format a disk and dump the DOS files to it. When you boot this disk your system will be configured for one drive, which will give 12480 free with DOS 2.0 and slightly more using DOS 2.5. This will ensure that the program will run. I have used Autocheck using the default value at location 1802 but I recommend the previous anyway.

A new disk will be required as Autocheck will take up 172 sectors, and the following for each cheque book - Cheque book name data 1 sector, cheque book categories 2 sectors, and the main data file 77 sectors. A single disk will hold the program and all the data files for the five cheque books. All together 171 sectors will be used.

GETTING STARTED

Type in Autocheck, but when using `TYPE` leave the left margin to see. (`PKCH 830-RETURN`). Unfortunately due to memory constraints some of the lines in the program will seem rather large. I have been through the listing and reduced those that I could in size. There were some that I could not reduce. This mainly concerns lines 7900 and 7901. These must be typed in using abbreviations and leaving no spaces within statements, don't worry, BASIC will insert the space back. For example a `PKCH` statement can be entered (`PKCH=2888/084`) or `GOTO` and `GOSUB`

`...GOSUB187601:GOTO187680`. Please bear in mind that the `TYPE` 1 code will not match if an abbreviation is used or spaces missed out, but this is only for one or two lines. Anyone not using an Epson compatible dot matrix printer will not have to worry about line 7900 as an alternative is offered in listing 5.

If you have an Epson compatible dot matrix printer such as `TM20` or `RM20` then type in the main program as it is. If you have a non-Epson 80-column printer type in listing 7 in place of the lines in listing 1. If you have only a 40-column printer, type in listing 2, substituting the lines for those in listing 1. Do not enter the REM lines and leave out the lines indicated by the REM lines.

When the typing is finished save Autocheck to the disk as `D.CHECK`. There will be a backup copy on another disk.

CREATING DATA FILES

We now have to create all the data files before we can use the program. When this is completed Autocheck will automatically load all the files for the last cheque book used, each time it is run.

Step 1 - type `RUN` and press return. Screen 170 will appear.

Step 2 - type `^CLOSE #?` and press return.

Step 3 - type `^BK = 1` and press `RETURN`.

Step 4 - type `GOSUB 11810:GOSUB 1808:CLOSE #80` and press `RETURN` again.

Eventually `SAVING DATA` will appear. When the operation is completed the screen will revert to normal and you can then `RUN` the program again. This time `LOADING DATA` will appear. This will now happen every time the program is run. The main screen of Autocheck will now appear.

Listing on page 17

continued on page 14



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MAIN SCREEN DISPLAY

The upper part of the screen shows the categories. There are two rows of expense categories on the left and one row of income on the right. The categories are marked with letters of the alphabet and the spaces by them are blank, because we have not defined any categories yet. The middle section shows the cheque entry display, this will also be used for editing cheques. The current balance is shown on the bottom right of the screen. As present it will show '0.00'. The very bottom of the screen is the command area.

DEFINING THE CATEGORIES

The first task for setting up is to enter the expense and income categories. A to P and Q to X respectively. Although all of the categories may be changed at any time, it is not a good idea to change a name after you have made entries in a particular category. Give the category names careful thought before any cheque details are entered. Press 'K' from the main screen to select categories. The prompt at the bottom now gives the choice of edit or display by category. Select the edit option. An inverse video bar in the command area now acts for the category letter. The options also exist here to press 'Y' once or 'Z' exit. Examine the screen and press the one of your choice. If you press a category letter a horizontal bar now appears to the right of the letter chosen, to show the field length, which is ten characters. The cursor is on the left of the field. Make the entry required. To leave a category blank, press RETURN only. If you make a mistake press the back space key and your entry will be erased. You may also choose the erase option to erase any single category or to erase them all. When entering categories remember 'W' to 'F' are expense and 'G' to 'X' are income.

Make sure that you do not enter two categories with exactly the same name even if one is income and the other expenditure otherwise, when using the search routines the program will retrieve both. After the entry is completed another category may be entered. Type 'Z' to exit.

You will now be asked if you wish to permanently save the categories. Type 'Y' to save them to disk. If you are starting a new cheque book you do not need to save these categories now, as they will be saved automatically by another part of the program after entering details for the new cheque book. The display mode for categories will be covered after cheque entry, as obviously there is nothing to display until entries are made. If you choose 'Y' or 'X' to saving the categories, the main prompt will re-appear in the command area of the screen.

STARTING A NEW CHEQUE BOOK

Once the categories have been entered from 'Z' you now be chosen from the main prompt. The display now gives the titles and numbers of all five cheque books. As present they will all be blank, as will the current cheque book. Select one number 0 - Start New Cheque Book. The first screen gives the opportunity to return to the main screen without any further action, this is because if you have just finished working on this file it will be erased when a new one is created. If you have worked on a file, save it to disk before starting a new one. Refer to the cheque entry mode for saving data files. Press 'C' to continue. The cheque book number must now be entered. If you are just starting up here you must press '1' although any number will be accepted at this stage. Now enter the cheque book title with up to fifteen characters and press RETURN. The program now asks for starting balance. Enter any figure positive or negative

between -99999.99 and 99999.99. If the figure is positive never enter a plus sign either here or anywhere else in the program. Press RETURN after your entry. All the data for this cheque book will now be saved to disk. If you have made a mistake with your entries here you will have to select to start another cheque book. Please also bear in mind that you will not be able to select a cheque book number which is already in use. You must change to the cheque book so that it is the 'current cheque book' and then then select the newer option - see the 'Re-start cheque book' description for more details.

Once you have defined your first cheque book and the data has been saved to disk the program will return to the main screen and the main prompt. Your current balance is displayed and you are ready to start entering cheques.

ENTERING CHEQUES

I have included cheque entry now as logically it will be what the first time user wants to do next. Firstly I must point out that you are restricted to 200 entries per cheque book, and the program does not check for a full file, so take care! The main routine can give an idea of the number of entries, but that is covered later. From the main screen and prompt press 'C' for cheques but first a word of warning. Although I have spent many hours debugging the program and trapping errors, I admit that a certain amount of care is used on this part of the program. I have not, for example, disabled the book file. If you do accidentally break the program, clear the screen, type GOTO 100, and press RETURN. This should help to recover the situation. The next prompt shows that the 'make' is cheques. This kind of information will always help as to where exactly you are in the program. The prompt shows that the next choice is between Entry and Search Edit. Study this display for a few moments as the Search Edit choice gives a new range of options. We will come back to Search Edit later, but the new press 'A' for the 'old cheques' mode. The mode will now have changed to 'old cheques'. Again study this prompt, it is the one that Autocheck will always come back to after entering a cheque. It also gives the option to save the data file to disk. Use this option when you have finished adding cheques to your file. This save routine also saves your current balance, so don't forget to use it. Press 'A' to add a cheque. The command area of the screen will now clear and 'VALUE' will appear. Press any letter or number key to start making your entry. Enter up to fifteen characters. If you make a mistake press the back space key and your entry will be erased, giving the chance to re-enter. Please note the arrow keys will not work. If the entry is less than the full field then press RETURN. If you type the last character in the field Autocheck will assume that you have entered it correctly and move to the next field. The command area will now display 'DATE (MMDDYY)' indicating that six digits must be entered. For example the 25th January 1993 would be entered '0193'. If you try to enter a letter here or enter less than six characters Autocheck will beep and refuse the entry, otherwise the entry format is the same. Autocheck will also check for valid month and day entries. All the fields will assume correct entry if the last character in the field is typed, so long as it and the characters before it are allowed. The cheque entry routine also automatically sorts the entries into date order. This means that if there is a cheque from the past which you have forgotten to enter, you can still enter it as the program will automatically put it in the right place. Bear in mind though that if you already have several months of data in the file, that Autocheck will take a few seconds to find the right place for an old entry, especially if it is in the first month of your records. A word of caution here though, and that is that the

program is only designed for sorting or searching entries from the same year. You may not overlap from one year to the next. In this case you must reenter the cheque book for the new year, or start a new one if you want a separate record for each year.

Enter the category by pressing the appropriate letter key. The cheque number should be entered next. The last cheque number will be displayed. Press RETURN for the last number + 1 or be entered by the program, or enter the number manually. You may enter from one to six digits. Only numbers will be accepted. Enter the amount from 0 to 999999.99. There is no need to enter the decimal point where there are no pence as the entry is formatted to two decimal places. Be aware that you do not enter the decimal point twice or more than two decimal places for the pence, or the program will crash. Autocheck will warn you if the entries are correct. If you press 'Y' the current balance will be adjusted and the program will return to the cheque entry mode. If you press 'N' the screen will go blank and the program will return to main screen and prompt after one or two seconds. If you answered 'Y' to enter a cheque then you may repeat the process by pressing 'A' again or save the file by pressing 'S'. If you answered 'N' you will have to access the cheque entry mode again.

RE-STARTING A CHEQUE BOOK

Press 'C' from the main prompt. The screen shows now is again the list of cheque books. Ensure that the display shows that the current cheque book is the one that you wish to re-start. If it is not then you will have to use the change cheque books option. Once satisfied press 'Y'. You will now have to re-enter the cheque book name and your new starting balance. The current date file will be erased and a blank one saved in disk, when the operation is completed Autocheck will return to the main screen.

CHANGING CHEQUE BOOKS

This option is again accessed by first pressing 'C' from the main prompt. The cheque book list is now displayed. Select the cheque book to change to by simply pressing its number. If the cheque book number chosen has not been used, or is in other words if it does not yet have a file, then Autocheck will ignore your selection. If your choice is accepted then you will be given the option of saving the current file first, as it will be lost when the new one is loaded in. When the operation is completed the program will return to the main screen.

DISPLAYING CHEQUES BY CATEGORY

Press 'W' for categories from the main prompt. The command area now shows the mode as categories. The choice is given to 'E-Edit' or 'D-Display'. Press 'D' and an inverse video bar will now be displayed. Autocheck now expects a category letter to be pressed or 'Y' for all. Have an expense or income category may be selected. The display will now clear and show the category selected at the top of the screen. The items found will be displayed in the middle area of the display. The current balance is shown at the bottom of the screen. If the end of the search is reached or the screen is filled, the running totals for expense and income items found will also be displayed. If you choose all categories then both figures will show something. If you choose a single category then, depending on whether it was the expense or income, the one figure will be the total for that category and the other will show zero. If the display is filled then press the option key to continue. The totals will be updated for each screen.

Press the start key to return to the main screen and prompt.

DISPLAY CHEQUES BY PAYEE OR DATE

This part of the program is accessed by selecting cheque mode from the main prompt. Press 'C' from this prompt and then select 'S' for search/Edit options. The mode now shows 'Search Edit'. (Remember I said that keeping an eye on the mode will give you a good idea as to where you are in the program. I think that you will begin to see why now. I should also point out that I deliberately did not place the category search routine here, because I felt that it would be simpler if all the category functions went together. After selecting 'W' the choice is now Edit/Delete for which 'E' should be pressed or Search 'S'. For the moment press 'S', we will come back to Edit/delete in the next in a while. Another choice often 'F'-Payee or 'D'-Date. Notice that the mode has now changed to 'Cheque search'.

For 'payee' enter any number of characters up to fifteen. All the information corresponding to your entry will be displayed. The greater the number of characters entered the more specific will be the search. Here a running total will also be shown, but this will be the expense only.

For searching by date, enter a six digit number, as described earlier. Pressing RETURN only for the first day will default to the first date in the file. RETURN only for the second date will default to the last date in the file. All entries on or between the two dates will be displayed together with a running total for expense only.

EDITING OR DELETING CHEQUES

This option is chosen from the Search Edit cheques mode by pressing 'E'. The mode will change to Edit cheques. Autocheck next expects a category letter selection in order to start a search. Press the letter of your choice. When an entry is found all the details will be displayed in the command boxes of the main screen. Press START to delete the entry. OPTION to continue the search or SELECT to only the entry.

If you choose to delete the entry Autocheck will carry out your wishes and adjust your current balance. Autocheck will also close the gap in the file and after several seconds return the search.

If you choose to continue, the next entry found will be displayed, giving the same options again. If no more entries are found then end of file will be displayed, in which case you may press START to return to the cheque edit mode.

The editing option allows all the entries to be entered again. You may not press RETURN to keep a field, but must type over it even if it is the same. Unfortunately memory considerations do not allow full editing features. If you are entering something different in a field then you may end it with a RETURN, and Autocheck will ignore anything left in the box from the old entry. The current balance will be adjusted by considering both the old and new entries and the program will return to the main screen.

PRINTER SUPPORT

To display the printer option menu press 'P' from the main screen and prompt. The display will change to a different design and colour. At the top the printer type is shown together with the starting balance, while at the bottom the current balance and the last total found are displayed. The middle of the screen shows the options. Press 'E' to return to the main screen.

The category search option, accessed by pressing 'W' 

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from the printer menu, will require a single letter key press. All the entries found will printed and a total given for expenses and income. The page length is set at 40. If this is reached then sub-totals will be printed and Autocheck will pause giving the opportunity to position the paper for the next page, and continue printing as exit. You may also the page length by altering the value of PL in line number 14. The program must then be re-saved to disk to make this change permanent. The page length value is used in all of the print routines in Autocheck.

Press 'E' for the search routine. The main choice gives a list of "Paper" and "Data". These searches are along similar lines to those in the cheque made of the program. For paper any number of characters up to fifteen may be entered. Pressing return only for DATA and DATE1 gives the default values of the first entry and the last entry in the file. Six digits must be entered for the date. During printing page length will be followed and totals given for income and expenditure.

Pressing 'C' will print your own personal statement for the current cheque book. Near the top of the screen the program will ask if you wish to enter a new starting balance before printing. This offers the option of seeing how a different starting balance would affect your current balance. This entry only affects this particular print out and your starting balance will not be altered permanently. Before printing commences, Autocheck will examine the file to give the number of pages based on the current page length. When this is completed the current page length will be displayed. Autocheck will also display the number of pages of entries found in the records. The last page will be only partially filled. Enter the page number required and press RETURN, or press RETURN for the whole file. The page option

is given because if you have several pages, you may only require the most recent one printed, especially if you already have a print out of the whole file. For example, if Autocheck shows two pages the most recent entries will be on page two. If you now select page two for printing, Autocheck will save the file updating your current balance. Only when the page you have selected is reached, will printing start. This means that the current balance shown at the base of the most recent page will be up to date. The printed copy itself takes the form of a statement with the amount of the cheque printed with other details. Your current balance less the cheque amount is printed in the far right column, next to the amount. Any income will be added to your balance. The forty column print out only includes the month and date, not the year. Only the first 10 characters for the Paper are printed. These changes and those in the other printer routines are to allow for longer columns. The righty column format is as described. Epson printers will print in condensed/elongated print.

ACKNOWLEDGEMENTS

All the coloured screens were designed using 'Multicolour screen generator' by Richard J. Kalaghe, first published in ANALOG magazine (see number twelve). My only comment is a big thank you to Richard, it is a very useful utility.

AUTOCHECK is a long listing - be prepared! Also available ready to run on issue 24 disk - see page 70

SPEED CHECK

by Garry Francis

Speed Check is an essential utility for all owners of Atari disk drives. The program allows you to check the speed of the motor in your disk drive without having to pull the drive to pieces. It presents a clear, no-nonsense digital display of test results as well as diagnostic messages, mean and standard deviation. In addition, it is the only disk speed checker that works on both PAL and NTSC systems.

The accompanying article explains how to get Speed Check up and running and how to use it. This is followed by a brief discussion of how the program works for the benefit of advanced users. In a follow-up article next issue, I'll discuss the symptoms of an incorrect drive speed, 5 ways of testing the speed and how to adjust the speed yourself.

System Requirements

- Atari 400/800 XL/XL computer with a minimum of 16K RAM
- Any Atari (or compatible) disk drive whose optimum motor speed is 288 r.p.m.
- Atari BASIC

HOW TO ENTER SPEED CHECK

The complete Speed Check program is given in listing 1. The listing is fairly straightforward except for the machine language wiring in line 1030. Be particularly careful when entering this line. If you feel uncomfortable with lines of gibberish/look like this, then use listing 2 to generate it for you automatically. Just follow these instructions:

1. Insert a formatted disk into drive 1 and leave it there until finished.
2. Enter the whole of listing 1 except for line 1030 and make sure there are no typing errors.
3. Save a copy of the program on disk using SAVE "D:SPEED.BAS". Do not attempt to run the program yet.
4. Type NEW.
5. Enter listing 2 and make sure there are no typing errors.
6. Type RUN. This will create line 1030 for you on a temporary file called TEMP.
7. Type NEW.
8. Load the original program using LOAD "D:SPEED.BAS".
9. Enter line 1030 using ENTER "D:TEMP".
10. Save the completed program using SAVE "D:SPEED.BAS".

```

01 1 NEW *****
02 2 NEW # SPEED CHECK #
03 3 NEW # VOLUME 1.0 288RPM #
04 4 NEW #SERIAL#1700 #ATARI #FRANCIS #
05 5 NEW #-----#
06 6 NEW # PAGE 5 MAGAZINE - ENGLAND #
07 7 NEW *****
08 8 NEW
09 100 GOTO 1000
10 110 FOR I=0 TO 1000:POSITION 0,0
11 120 "TEST MOTOR SPEED 11:40:17:PAGE 10,0
12 130 #0774,04:0000 #0,0,0,"I"
13 140 TEMP 10:0000 #0,0,0:0000:TEMP #I
14 150 IF #040 #0 #100 THEN 100
15 160 CLOSE #I:PAGE 10,0:PAGE 0074,0:PG
16 170 #0774,04:0000 #0,0,0,"I"
17 180 POSITION 0,0:"PRESS A FORMATED
18 190 INTO DRIVE 1:UNTIL IT "PRESS [ESC]
19 200 TO 00"
20 210 ? IT "PRESS [ESC] TO STOP DRIVE
21 220 "IT IT "PRESS [ESC] TO START DRIVE".
22 230 #0000
23 240 IF #0000#0000 THEN 100
24 250 IF #0000#0000#0000 THEN 100
25 260 FOR I=0 TO 100:POSITION 0,0:"
26 270 "SYSTEMS DRIVE "000,"
27 280 #0000#0000#0000:IF #0000#0000#0000
28 290 #0000#0000#0000#0000#0000#0000#
29 300 #0000#0000#0000#0000#0000#0000#
30 310 #0000#0000#0000#0000#0000#0000#
31 320 #0000#0000#0000#0000#0000#0000#
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94 950 #0000#0000#0000#0000#0000#0000#
95 960 #0000#0000#0000#0000#0000#0000#
96 970 #0000#0000#0000#0000#0000#0000#
97 980 #0000#0000#0000#0000#0000#0000#
98 990 #0000#0000#0000#0000#0000#0000#
99 1000 #0000#0000#0000#0000#0000#0000#

```

Listing 1

```

01 1 NEW *****
02 2 NEW # VOLUME 1.0 288RPM #
03 3 NEW # SERIAL #1700 #ATARI #FRANCIS #
04 4 NEW #-----#
05 5 NEW # PAGE 5 MAGAZINE - ENGLAND #
06 6 NEW *****
07 7 NEW
08 8 NEW
09 100 GOTO 1000
10 110 FOR I=0 TO 1000:POSITION 0,0
11 120 "TEST MOTOR SPEED 11:40:17:PAGE 10,0
12 130 #0774,04:0000 #0,0,0,"I"
13 140 TEMP 10:0000 #0,0,0:0000:TEMP #I
14 150 IF #040 #0 #100 THEN 100
15 160 CLOSE #I:PAGE 10,0:PAGE 0074,0:PG
16 170 #0774,04:0000 #0,0,0,"I"
17 180 POSITION 0,0:"PRESS A FORMATED
18 190 INTO DRIVE 1:UNTIL IT "PRESS [ESC]
19 200 TO 00"
20 210 ? IT "PRESS [ESC] TO STOP DRIVE
21 220 "IT IT "PRESS [ESC] TO START DRIVE".
22 230 #0000
23 240 IF #0000#0000 THEN 100
24 250 IF #0000#0000#0000 THEN 100
25 260 FOR I=0 TO 100:POSITION 0,0:"
26 270 "SYSTEMS DRIVE "000,"
27 280 #0000#0000#0000:IF #0000#0000#0000
28 290 #0000#0000#0000#0000#0000#0000#
29 300 #0000#0000#0000#0000#0000#0000#
30 310 #0000#0000#0000#0000#0000#0000#
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69 700 #0000#0000#0000#0000#0000#0000#
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71 720 #0000#0000#0000#0000#0000#0000#
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73 740 #0000#0000#0000#0000#0000#0000#
74 750 #0000#0000#0000#0000#0000#0000#
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86 870 #0000#0000#0000#0000#0000#0000#
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88 890 #0000#0000#0000#0000#0000#0000#
89 900 #0000#0000#0000#0000#0000#0000#
90 910 #0000#0000#0000#0000#0000#0000#
91 920 #0000#0000#0000#0000#0000#0000#
92 930 #0000#0000#0000#0000#0000#0000#
93 940 #0000#0000#0000#0000#0000#0000#
94 950 #0000#0000#0000#0000#0000#0000#
95 960 #0000#0000#0000#0000#0000#0000#
96 970 #0000#0000#0000#0000#0000#0000#
97 980 #0000#0000#0000#0000#0000#0000#
98 990 #0000#0000#0000#0000#0000#0000#
99 1000 #0000#0000#0000#0000#0000#0000#

```

Listing 2

SELECT SELECT is used to pause the test so that you can take notes, change disks, answer the telephone, grab a cup of coffee or whatever. After pressing SELECT, a message such as "TEST PAUSED ON DRIVE 1" will be displayed on the message line and the drive will stop. This does not affect the test in any way. It may be continued from where you left off by pressing START or you may choose to re-run the program by pressing OPTION.

OPTION OPTION is normally used to change the drive number. It returns you to the first screen and it, in effect, does the same as re-running the program from the beginning. The screen is cleared and all previous test results are lost.

Other Keys The keyboard has been "lock-proofed" to ensure that you can't press the wrong key. The BREAK key is disabled at all times. The rest of the keyboard is also disabled except for the period when entering the drive number. CTRL-I has no effect. All of this has one interesting side effect. If there is no user input for about 9 minutes on NTSC systems or 11 minutes on PAL systems, the random colour switching of the screen mode will come into effect. It is unlikely that you'd be running the program for this long, but if you do and you find the random colour switching, you can press any of the console keys that would be valid at that time and the display will return to normal. As the keyboard is disabled, pressing a key will not kill the screen mode as you would normally expect.

The only way to abort the program and return to BASIC is to press SYSTEM RESET. This was done to ensure that all system parameters are properly reset.

ANALYSING TEST RESULTS

The accuracy of the testing procedure is determined by the real time clock. As this is only accurate to one jiffy (1/70th second on PAL systems or 1/60th second on NTSC systems), the individual test results become accurate to about plus or minus two jiffies. This works out to be somewhat less than plus or minus 0.2 revolutions per test (remembering there are 30 revolutions per test), so the integer test results may fluctuate slightly. If your test results are consistently in the green area, then your drive's speed is okay. As mentioned above, the optimum speed for Amstrad disk drives is 288 r.p.m., but anything between 288 and 290 r.p.m. is acceptable.

It is important to take note of the mean and standard deviation of each 10 test results. The mean should be well within the 285-290 limit and the standard deviation should be less than (say) 1 r.p.m. If the standard deviation is consistently over 1 r.p.m., then your drive motor is suffering from excessive fluctuations and may need servicing.

Bad Readings

There are two situations when an unreliable test result will occur. The first is due to a bug in the Revision A operating system of the Amstrad 486/800 computers which occasionally causes a device on the serial bus to 'go to sleep'. It will be quite apparent when this happens, because the beep...beep...beep of sector 1 being read will come to a stop. If the drive is inactive for very long, it will stop spinning and the busy light will go out. Do not touch anything. The drive will come back to life after a variable amount of time, but the result for that test will be ridiculously low. Simply ignore this figure. This bug was ironed out in the SLUXE operating system, hence SLUXE owners should not encounter this situation.

The second situation arises above when you adjust the speed while the test is being carried out (see next issue). Again, simply ignore this figure and wait for the next one.

In both these cases, remember that the mean and standard deviation will be affected and should also be ignored. If you like, you can press OPTION to re-run the program and clear out the bad results.

Troubleshooting

Speed Check has been thoroughly tested and is believed to be totally bug free. The only possible errors that can occur are as a result of attempts to communicate with the disk drive via the Serial Input/Output facility (SIO). The causes of these errors and the possible recovery are discussed below. This is not light reading. You may need to read up on SIO in order to understand some of these descriptions. Refer to the Operating System User's Manual (Part No. C0216619); pages 130 to 140 and the Hardware Manual (Part No. C0216609); pages 11.25 to 11.27.

Of the 6 possible errors generated by SIO, the only ones you are likely to encounter are errors 138 and 144. When an error occurs, a message such as "ERROR 138...TEST ABORTED ON DRIVE 1" will be displayed on the message line. Once the source of the error has been corrected, simply press START to continue from where the program left off or press OPTION to re-run the program from the first screen.

ERROR MESSAGES - CAUSE AND RECOVERY

ERROR 134 - Device Timeout

Cause When the computer sent a command frame to the specified drive, the drive did not send an acknowledgement within the time limit set by SIO. This is usually because the specified drive does not exist, but may also occur if the command frame checksum calculated by the drive does not agree with the checksum sent by the computer.

Recovery You may have specified the wrong drive number. Check the drive number indicated in the error message. If it is not the drive you mean to test, press OPTION to re-run the program and set the correct drive number. If this is not the problem, then:

- Check that the drive is plugged in, power is on and the drive is turned on (indicated by the 'power on' light).
- Check that the I/O cable between the computer and the drive is connected and working correctly, particularly lines 2, 3 and 7.
- Check that the drive select switches at the back of the drive are set correctly.

If all else fails, you may have the checksum problem, which would indicate a garbled command frame from the computer. This is rare and may indicate a hardware problem.

ERROR 139 - Device NAK

Cause The drive could not carry out the command frame sent by the computer because it contained an invalid command or the auxiliary bytes referred to an unaddressable sector.

Recovery As Speed Check only reads sector 1, this error should not occur. If it does, you may have a hardware problem.

ERROR 140 - Serial Bus Input Framing Error

Cause There were extra or missing data bits received by the computer. (All serial communications are done using an asynchronous signal. Each byte of data is transmitted and

received as 8 bits of serial data preceded by a logic zero start bit and followed by a logic one stop bit.)

Recovery: This is a very rare error which occurs when the data from the drive is garbled. Check that the I/O cable between the drive and the computer is functioning correctly - particularly line 5. Alternatively, there may be a hardware problem.

ERROR 141 = Serial Bus Data Frame Overrun Error
Cause: A byte of data received by the computer "misses" the previous byte of data because the microprocessor had not responded fast enough to deal with the first byte.

Recovery: Again this is a rare error which may indicate a hardware problem.

ERROR 143 = Serial Bus Data Frame Checksum Error

Cause: The checksum of the last data frame sent by the drive does not agree with the checksum calculated by the computer. Either the data or the checksum itself may be garbled.

Recovery: This is a common error with cassette I/O, but it shouldn't happen very often with disk drives. Check the I/O cable (particularly line 3) and try again. If the error persists, it may be due to a hardware problem.

ERROR 144 = Device Data Error

Cause: The drive could not execute a valid command. This will usually occur if the drive cannot locate the required sector - in our case, sector 1. The error will probably be preceded by a terrible grunting noise from the support motor of the drive as it attempts to the innermost track, then returns to track 0 to reattempt the operation. It will make 3 attempts before generating the error message.

Recovery: The inability to find the sector may be because there is no disk in the drive or it is not inserted properly (in which case you should properly insert a disk and try again), the disk is not formatted (replace with a formatted disk) or sector 1 of the disk is damaged (use a different disk). The various manuals tell you that this error results from attempting to write to a write-protected disk. Don't panic! This would be true under normal circumstances, but it is not applicable to our case. You can rest assured that Speed Check never writes to a disk.

HOW SPEED CHECK WORKS

The program is written entirely in Atari BASIC except for one machine language routine. It is split into 2 distinct modes - the main program and the initialization.

The initialization is contained in a subroutine (lines 1000-1070) and is executed by the GO-SUB 1000 in the first line of the program. It begins by disabling Direct Memory Access (DMA), the keyboard and the BREAK key, making the cursor invisible, setting the margins and colours and initializing a couple of variables. This is all fairly straightforward. It then checks the hardware region PAL at memory location 10368 (E091E) to determine whether the program is running on a PAL system or NTSC. If it is PAL, then bits 1, 2 and 3 will be clear (in logic terms. If it is NTSC, then these bits will be set (in logic terms). (According to the hardware manual, bit 0 is not used, but it is always equal to one on my PAL system. The remaining bits are also supposedly not used, but they are equal to zero on my system.)

If the system is PAL, then it is assumed that the power supply is 50Hz and hence the real-time clock RTCLOCK at

memory location 18-28 (E13-E1E) is updated 50 times per second. If the system is NTSC, then the power supply must be 60 Hz and the real-time clock is updated 60 times per second. The variable HZ is set accordingly.

The array for storing the test results and a few strings are then dimensioned. The machine language routine is relocatable, so it is stored in a string S14.

The display list is modified to include a few lines of GRAPHICS 1. The title and copyright information is printed and the operating system's pointer to the start of display memory is moved up in memory by 280 bytes so that the title is not cleared upon execution of the clear screen command.

Finally, the Device Control Block (DCB) is set up to read sector 1 into the cassette buffer, DMA is re-enabled and control is returned to the main program. This entire process takes a fraction of a second.

The main program is fairly straightforward until you reach the machine language routine at line 200. The assembly language source code for this routine is given in listing 5. This is supplied for information purposes only. You do not need to type it in.

The routine begins by reading the same sector five times to allow the drive to get up to speed. Each time it reads the sector, it checks to see whether there were any errors. If there were, it returns to BASIC. It also checks to see whether the SELECT or OPTION keys were pressed. If they were, it again returns to BASIC. At the end of the five revolutions, it resets the real-time clock and repeats the above process, but for 10 revolutions instead of five. If successful, the time is saved and control is returned to BASIC. Note that the code for the two sets of tests is virtually identical. This was coded 'in-line' instead of as two calls to a subroutine in order to make the whole thing relocatable.

Once BASIC gets control again, it checks to see whether the machine language routine completed successfully. There are three possible outcomes:

- The machine language routine terminated early because of an error. This will be indicated by INSTANT at memory location 771 (E00). A zero indicates no error. Any other number indicates the error code.
- The machine language routine was terminated early because the user pressed SELECT or OPTION. This will be indicated by memory location 208. 0 means nothing was pressed. 1 means SELECT was pressed. 4 means OPTION was pressed.
- The machine language routine completed successfully, in which case the test result is displayed and the program continues on as described earlier.

The statistical calculations are fairly straightforward. Some users may find the subroutines at lines 150-160 to be useful. Its purpose is to round off the decimal number in TEMP and SDR1 so that it is right justified with two digits after the decimal point. For example, 0 becomes 0.00, 3.1 becomes 3.10, 2.47121 becomes 2.47, 3.0004 becomes 3.00 and so on.

Next Issue

Next issue, I'll explain how to adjust your drive's speed if Speed Check indicates that it's running too fast or too slow. See you then!

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RAMBIT

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review by Derryck Croker

Rambit is the Rambit of the cassette based system.

Saving words perhaps, but most that home can when put to the test. Just to whet your appetite, I converted two games to the Rambit format, and looted them. After a very short normal speed load with the familiar loading sound, the screen turned black, and a 'loading' message appeared which was accompanied by rapidly changing characters along with what I can only describe as the sound of rushing water. This was the the game being loaded into memory. Just 53 seconds later the first game was running. Compare this with the original, which took 3 minutes 45 seconds! The second game, which before conversion took 9 minutes 25 seconds to load, was running just 1 minute after conversion. This game, though, had to be changed to single load before it could be converted to the Rambit format. More on this later.

WHAT IS RAMBIT?

What do you get for your £18? The Rambit system consists of a small circuit board consisting of IC and a small handful of components, and a tape containing the conversion utility program which is designed to be used either on its own or with an Assembler/Editor cartridge. You will need this cartridge to assist in altering multi-stage load tapes to single stage before converting them to the Rambit format.

The circuit board is neatly fitted inside your cassette unit. There are 3 leads to be soldered to the printed circuitry, and my 1010 required that a track be cut and a wire link and capacitor be installed. The instructions give a step-by-step guide, and a diagram of the tracks is supplied to assist in the construction of the leads from the interface board. One black mark, there was no mention of which way round the capacitor should go, but in fact this does not matter. If you prefer, you can have Rambit installed this board for you. Without this interface converted programs will not load, and in the moment Rambit will not convert BASIC programs however the interface in no way interferes with normal usage of the cassette unit.

So what is the Rambit format? You probably already know that the normal load rate for loading Atari tapes is a mere 600 baud whereas most machine machines use 1200 or 2400 baud rates. Tapes converted to Rambit format all have a short normal speed load section at the front of the tape which then controls the loading of the program (load loading) at the incredible speed of 1800-3600 baud. Rambit's loader program loads into Page 0 and the lower half of the stack on Page 1 so that most of the computer's memory can be loaded without fear of overwriting the loader program.

When used in conjunction with an Assembler/Editor cartridge, Rambit will also save assembled machine code in the high-speed format. The resulting tape can be loaded in

just the same manner as a game, and it will automatically run if you have loaded RUNAID in your code. You are required to include the binary file identification bytes, normally automatically included with your assembled program when saved to tape, so you may prefer to save your code from the Assembler/Editor directly to tape in the normal fashion, and then load it back with Rambit for conversion. The loader program for these binary files loads Page 7 and the lower half of Page 8, and the appropriate loader is automatically added by Rambit.

Rambit's function, then, is to save consecutive areas of memory or single or compressed files produced by the Assembler/Editor cartridge as the 3300-3600 baud rate mentioned. Single stage load tapes follow Rambit's conversion already, so converting these is a matter of using the utility's 'L' command to load the original, and the 'S' command to save the converted program to a blank tape. A verification facility allows the checking of the new tape's loading ability. A variety of other commands, many of which bear a close similarity to those in the Assembler/Editor cartridge allow one to display and alter memory.

MULTI-STAGE CASSETTES

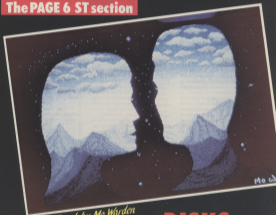
Multi-stage programs require to be changed to single stage first. The instructions give a guide as to how to do this, but basically you have to use the Assembler/Editor cartridge with the utility to load the first stage in order to locate where the main routine is to be loaded and from where it should be done. Once this has been accomplished, the main section is loaded with the 'L' command and then you have to add the boot address information to the start of the program in memory. A study of the instructions together with a good memory map, such as Computer's 'Mapping the Atari', and preferably the Atari Technical Notes will be of assistance here. The standard boot format will allow only 256 blocks or 512K to be loaded, but Rambit can be otherwise unused five bits to allow blocks of over 128 to be loaded, one of the reasons that multi-stage programs are often used. This block count will be found in locations \$98 and \$99 according to the length of the program loaded. Free transfer between the utility and the Assembler cartridge is possible without problem.

CONCLUSION

Make no mistake, Rambit is a very powerful system but it requires at least a modicum acquaintance with machine code and one or other of the two books mentioned to get the best from it.

STAGE

The PAGE 6 ST section



Cloudhead by Me Würden

Reviews

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THE LATEST ST SOFTWARE NEWS IN THE FORM OF A ROUNDUP BY LES ELLINGHAM OF THIS YEAR'S PCW SHOW

The Personal Computer World Show of 1988 turned out to be the showpiece for the ST with around 95% of the Atari area devoted to ST products and with a fair number of exhibitors on the main floor also showing or announcing ST products. Rather than offering a direct commentary on the show itself, I will concentrate on reporting those items of software and hardware that have recently become available or that you should be seeing soon. Bear in mind that this summary includes the vast majority of American software, so there were few direct American exhibitors, so this really is only the tip of the iceberg!

Let's start with Atari. You have probably read elsewhere but the main announcements were **2MB** and **4MB** versions of the ST called (unsurprisingly) the **2666ST** and **4166ST**. Prices with store discounts are £1189 and £1458 respectively. Perhaps most interesting to existing owners was the 'BBB' chip which increases the speed of graphics processing up to six-fold. Atari states that this will be available from authorized dealers for £30 plus VAT as an upgrade kit for the complete range of ST computers. Software from Atari included **dbMAN**, a **dBASE III** clone for use on ST and **PARTICIAN** a CRM terminal program with just about every facility you may need for communications in an easy to use format. Price is £49. Atari also had a catalogue of ST software for sale. It looked interesting but as they wanted me to pay the full retail price of £14.95 for the privilege of reviewing it for you (and thereby gaining more sales for them) I declined the offer. I am not paying £14.95 for a catalogue without knowing if it is worth it, how about you?

Jeff Miner from Lhasman is working on an enhanced version of **Colosspace**, now that he has learned more of the capabilities of the machine and this should be out quite soon.

Atari Software appear to have a licensing deal with Activision from the U.S.A., a company that produced several Atari 8-bit titles in the early days and then seemed to disappear. The one interesting thing that you Atari fans in price. For the first time you will now be able to get software for as low as £11.95. At this price is **Travis ST** for two to four players, **Pugganet** which is a new approach to backgammon, a graphics software called **Willy The Kid and Flip Flop**, another version of **Reversi**. At £39.95 comes the old Activision classic, **Strip Poker plus ST Gold**, **Trail Blazer** and an arcade game entitled **Space Pilot**. It seems that gold and silver are all the rage at the moment.

Timeworks concentrate on the professional side of computing with a word processor, a database and spreadsheet. The word processor, **Word Writer ST** includes three spell checkers and an integrated outline and was full CRM, interesting. The spreadsheet looks very interesting for the price. **Data Manager ST** is a flexible database which again uses CRM and includes charts, reports and sample applications. Finally **SwiftCalc ST** is a standard spreadsheet with graphics supporting 640 rows by 256 columns and some interesting graphics and other features. Each program is £34.95 and they can be identified with one another.

Rainbird was showing the long awaited **Scarglider** which is a Star Raiders style star-galaxy exploration selling for £24.95. Many game lovers raved about this one as the star of the show. Rainbird also have **The Pans** and the **Level 9** collection of adventures, **Jewels of Darkness**.

Comments were over in the business hall and may have been missed by many ST owners. Their single and dual IBM 5.25" drives were on display but most interest centered around a combined 5.4" and 5.25" drive allowing software developers or owners of IBM PCs to access a wider range of

software from one unit. A spokesman for the company also promised something "very interesting" for the ST shortly, but declined to give any further details.

U.S. Gold should be releasing several titles for the ST soon, including Microprose's re-mastered classic flight simulator and others. **Silent Service** is already available. Two major coin-op games coming are **Demoliter** and **Kevlars** which should add a sparkle to any gamsters eye!

Gravis was on the Atari stand with an ST version of **LogiSoft** an integrated database, spreadsheet and simulator which has received very good reviews in the more serious computer press. Some regard this as the best spreadsheet of all so its conversion to the ST is a welcome sign of acceptance of the machine by the major serious software producers.

Parked up somewhere was a trailer on an arcade adventure from System 1 entitled **Demonator** of which little was explained and two games, **Naughty Knights** and **The Last Ninja** which they classified as 'addictive computer game' and 'exciting computer game' respectively. Is that enough to make you rush out and buy?

Reikon has recently signed an agreement with Shomer Corporation in the U.S.A. and raised the greatest excitement with the long awaited **Misc-Emulator** which they call **Ultra-88**. This is being cleverly marketed as an upgrade to the **Misc** with instructions to remove the chips from your own **Misc** to gain the advantage of the faster processing and greater capacity of the ST. Fair enough if you already have access to a **Misc** and software which you can port across but how long will it be before all of the existing **Misc** software has its equivalent on the ST? Reikon also have a number of other ST products including a **Real Time Clock**, **Macro Manager**, **ColorMatrix**, a unique word processor using colour to highlight and distinguish text. Also a **Professional Mail Sequencer** and a **Games ControlPanel**. A lot of product worth checking out.

Marshall continue to push out product unabated and seem to be getting the right balance between quality and quantity. To detail

MORE ON PAGE 35

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MORE NEWS FROM THE PCW SHOW

everything fully would take a whole page but look out for **Karate Kid II** with superb graphics, a chess simulation, **Tetris Challenge**, **Electronic Post, Painted Factory**, a new **ISIS** program, a British **Pageoul** program and a **back-up system for Hard Disks**. There will undoubtedly be more added to what is already the widest collection of ST software from any manufacturer.

One of the most talked about accessories came from Computer Concepts. **Back-Pack** is a ROM based set of accessories comprising a calculator, clock and alarm, a diary, notepad and typewriter as well as an address book, a printer buffer and memobit. Being a cartridge, no extra RAM is used for the accessories which are always available. Disadvantage at the moment is that you can't also plug in a real time clock although others are working on such a universal plug in board to solve the problem. Price is £29. Computer Concepts also have **Fast Backs** on ROM which also received a lot of favourable comment.

Silicon Chip finally launched their long awaited ST accessories which has a very impressive specification and sales. GEM, Consulting Sales Ledger, Purchase Ledger, Stock Control and Financial Ledger, the package is aimed at the small businesses and, with extensive help facilities, should be easy enough for most businessmen to use. Launch price was £150 plus VAT.

My choice for one of the show was undoubtedly **Microsoft** and from comments received at the PAGE 5 stand, a lot of people agreed. **Microsoft** had three incredible packages, two graphics programs and a desktop-publishing program that will head the whole desktop-publishing market. The graphics packages are **Art Director** and **Video Director** and they are quite simply the very best so far for the ST. Over a year in development by Andersens in Hungary, **Art Director** is a truly top-class professional graphics program with applications from creative fine to commercial mock-up and visuals. **Video Director** can take images from **Art Director** and combine them in almost any way. The results are professional enough for full video use and the ease of use has to be seen to be believed. The prices are £149.95 and £299.95 respectively which

is truly a fraction of the real worth of programs of this quality.

To explain **Floer Street**, **Publishers** would take pages. Just take my word that it is the most advanced desktop-publishing program to yet appear on any standard micro. One or two things still need to be completed but I can't wait to begin to use it and will bring you a full review in due time.

Professional musicians must be delighted with the ST for a couple of companies were demonstrating how the machine can be used in the music studio to achieve results which would normally require equipment costing 10 times the price. **Steinberg Research** had **Pro-14 MIDI Sequencer** and **Hybrid Arx** also showed a sequencer as well as a 16-bit sound sampler that sampled at the same speed as a compact disk. Samples were taken which were indistinguishable from the original and which could then be easily edited with the mouse. **N-a-a-cinemas** probably took a long time to do, but on the ST you could achieve the same result in a few seconds!

A gentleman from **Artis Associates** had a small table on the Atari stand to show **Make It Move**, an excellent system for producing slide shows, animated business reports and more from Neochrome or Digas pictures. Anybody could produce a 'script' outlining a presentation or just use it for fun to enhance their own artwork. U.S. price is \$49.95 but your retailer will be able to confirm his own price. Continuous updates are promised making it a very powerful program.

Another couple of products which gained a lot of attention were a **Video-Digitizer** and **The Sound Master** professional sound-digitizer from **Prime Technik** in Vienna. Quality on both was excellent with a superb sound and graphics demo disk that many (including me) thought was a video-cassette. The **Video-Digitizer** is now being distributed in this country now by **Bliss**.

If you need a cheap clock for your ST, a British company producing one in **Trigoniser Systems** in Gloucester. Called **ST Timepiece** it retails at £24.44 including VAT.

Incidentally, new from **Activision**, continue to produce their acclaimed range of adventures on the ST. By the time you read this two new adventures

should be available. **Lanther** **Adventures of Phobos** and **Moonmist**. The first begins a new **Infamous** Comedy genre with three 'laughterful' levels to select your fun and **Moonmist** is an interactive fiction tale of phobias and phobias. Both are £29.95.

Hitachi Technology now have a camera package available which is IBM based and fully supports **Protext SuperTerm** has all the usual features, and costs £12.19 plus VAT. An exclusive package of the **W34000** state-of-the-art micro-array modem and software is available at £199.95 exclusive of VAT.

Microsoft who had previously produced **Master Mouse**, one of the five mouse games for the ST came in with an unexpected bang with five games all running in colour and featuring full optional midi sound. **ST Karate** topped the bill with digitised sound. **ST Protector** is a platform style game as is **Space Shuttle** which features 3D action. Other arcade titles include **War Zone** and **Fire Blast**. If the software lives up to the packaging (which is superb) there should be a bonus for ST gamers.

What about books? There weren't that many but one that arrived mid way through the show looks like being the best yet. From **Glennay** it is called **The Complete Atari ST 80088**.

Programmer's Reference Guide and gives an excellent guide for the programmer. **Glennay** have at least eight other titles which we will bring you details of in due course. First Publishing continue to expand their range of **AMAZON** books and are now supplementing these with software from the same company. Finally one from **Sybase** to look out for is **Understanding the Atari ST** a 'combined tutorial and reference guide'.

And there was more... **Necessary** from **Norwegen**, a number of new things from **Kurus**, upgrades from **Helm** and a whole host of stuff that I did not get a chance to see or for which licenses was not available. A chap from **Germany** even showed me something called **CP/M BASIC** which, as demonstrated, was a BASIC running as fast as C. It was enough to keep you interested for now! ■

DISKS

For those of you who have gone from the 8-bit Atari computers to the 16-bit ST's there have been many surprises for you in the past few months and there are many (obvious) differences between the two systems. One of the great advantages of the ST is the ability to store MBs of data on a single-sided disk. What joy! One of the initial disappointments is that, not knowing how this data is stored, you cannot play around with sector editors and the like as you used to on the old 810. Fear not, in this article we hope to point you in the right direction so that you can begin to understand how to get out of these disk problems that are bound to occur at some stage.

SECTOR LAYOUT

The ST disk is divided into 98 tracks (0 to 79) with 9 sectors per track (1 to 9) and is written in QUAD density (312 bytes per sector). When a disk is formatted, a Root sector (track 0, sector 0), the File Allocation Table (starting at track 0, sector 1) and the Directory (track 1, sector 1) are established using all 18 sectors in the first two tracks. The remaining sectors (tracks 2 to 79, sectors 1 to 9) are initialized in pairs or by cluster with two sectors equaling one cluster. As a cluster is initialized, the File Allocation Table (F.A.T.) is updated to include the sector of the cluster. This continues until all 351 data clusters have been completed. If a cluster cannot be formatted or initialized the corresponding entry in F.A.T. is marked "not-available" and will remain that way until the disk is re-formatted or thrown away. If a cluster is marked as bad, the F.A.T. entry will contain a number between 8000 and 8FFF. That range of numbers simply means the cluster is unusable and will never be used to store data.

The ST disk uses track 1, sector 1 through track 79, sector 9 to store any files that you write to the disk and all filenames are listed on the disk directory in the order they are created. The directory is seven sectors long and has room for 112 entries with each entry being 32 bytes in length. Each entry contains the filename and extension, the file Attributes, the Time the last change was made to the file, the Date the last change was made, the number of the first cluster in the file and the length, in bytes, of the file. In addition there are 10 bytes that have been reserved for future use (Figure 1).

1) Filename	8 bytes	bytes 0 to 7
2) Filename Ext.	1 bytes	bytes 8 to 10
3) Attributes	1 byte	byte 11
4) Reserved	10 bytes	bytes 12 to 21
5) Time of last change	1 bytes	bytes 22 and 23
6) Date of last change	1 bytes	bytes 24 and 25
7) First Cluster number	1 bytes	bytes 26 and 27
8) File size (in bytes)	4 bytes	bytes 28 and 31

Figure 1 ST Directory Fields

ALL YOU NEED TO KNOW ABOUT THE ST FLOPPY DISK

DIRECTORY ENTRIES

The Filename and Extension are the first two fields in each entry of the directory. They take up the first 10 bytes of an entry and follow the same format as the Atari 800 or the IBM PC, with one small exception. If the first character of an entry is RD, the file has been deleted and is no longer available for your use. If no changes have been made to the disk since the file was deleted, it may be possible to recover it by using one of the many sector editors available.

The Attributes field is one byte long and contains a number that indicates any special or unique characteristics about this entry. There are only five bits of the entry used on the floppy at this time and they are listed in Figure 2. The next field is marked RESERVED and is 10 bytes long. This field will be filled with 00's on all disk entries and no plans for its use are known at this time.

The Time of Last Change field is 2 bytes long and is updated each time you write to a file. This field contains the HOURS, MINUTES and SECONDS of the last change to the file. This field is in the low byte, high byte format and uses all 16 bits. Starting with the highest bit, it uses 5 bits for the hour, 6 bits for the minutes and the low 5 bits for the seconds. The value in the seconds portion of the field must be multiplied by 2 to get the correct seconds count.

Bit 0	Read Only (not set if file is Read/Write)
Bit 1	Hidden
Bit 2	System
Bit 3	Volume Label (Name assigned to the disk)
Bit 4	Sub Directory (Hidden name)
Bit 5	Archive (this will be used on Hard Disks)
Bits 6 & 7	are not used at this time.

Figure 2 File Attributes

The Date of Last Change field is handled almost the same as the previous field. This field is changed along with the Time of Last Change and is also in the low byte, high byte format. Starting with the highest bit, it uses 7 bits for the year, 4 bits for the month and the last 5 bits for the day. Don't be surprised when the year equals a 3- or 4- (or more) digit file) because the year stored has 1988 subtracted from it.

The First Cluster field contains the number of the first cluster used for the file. The cluster information is stored in high byte, low byte order and should never go above 819F since there are only 351 clusters.

The File Size field is a value equal to the number of bytes used in the file. This number divided by 1024 (1K) will tell you how many clusters are being used for the file (cluster * 2 = sectors).

continued overleaf

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SOFTWORKS BASIC

Review by Stephen Eitelman

Softworks Basic is a new Basic compiler for the ST. A compiler translates an entire program into machine language before executing it, whereas an interpreter such as ST BASIC translates each command into machine language and then executes it before going on to the next command. Routines with much repetition such as lengthy FOR-NEXT loops can be speeded up considerably through the use of a compiler, or they should be if the compiler is well written.

The manual for Softworks Basic is meticulously done, 80 pages of 4" by 8" paper written on both sides. For quick reference it has a complete table of contents and is well indexed. The compiler proves easy to use and comes complete on one single-sided disk. Compilation is fast and consists of two steps, compilation (generation of machine code) and linking to the machine module (copying library functions, relocating the finished code etc.). After the machine module is linked, the program automatically executes.

An editor is supplied with which most users will be familiar, it is 1st Word, version 1.8M. It is automatically coupled to any program that ends with a .BAS extension. When such a program is selected from the desktop, 1st Word is loaded first and then the selected program is read in. This feature only functions properly if the disk accessories are not modified.

DIAGLECT

This particular version of Basic has a very powerful set of commands. It includes a wide range of flexible string manipulation commands and a surprisingly complete set of math routines, although there are no matrix or complex math commands (such as square root of -1). Softworks Basic also includes what are called Mapped variables. These can be subsets of other variables, such as would be found in main, address, record, sequence number etc. This allows relatively complicated data structures to be handled either as a single entity or by their component parts. Additional features permit calling machine language routines with the CALL command, chaining files together, and VDI/ANS calls. VDI and ANSI calls permit the graphics and sound capabilities of the ST to be utilized, although some substantial effort must be expended to learn the use of the functions. Output formatting is very flexible with the PRINT USING statement and about 18 associated control characters. Programs can be written with or without line numbers. There is considerable file manipulation capability, including moving the various parts on the ST as if they were sequential files. Error trapping is provided so that errors can be made to cause the program to branch to an error message without crashing.

SPEED

Now for some of the bad news. Once again, we have a compiler that is slow, slow, slow for math applications! It runs such programs four times slower than the ST BASIC interpreter, which I find just plain unacceptable (and incomprehensible). The table tells it all. The Philon Compiler is included for comparison.

Execution time in Minutes/seconds

Test	A	B	C	D	E
ST BASIC	0:31	1:09	5:04	1:45	0:28
Softworks Basic	1:36	0:24	0:49	0:37	0:09
Philon Basic	1:39	2:04	2:25	0:36	0:05

A - $1 < i < n$ 10000, $C(101)^{i-1}$

B - Generate 1000 random strings

C - Sort 1000 strings

D - Print 1000 sorted strings

E - Generate 1 - 2047 for prime numbers using sieve (see footnote)

The good news is that Softworks Basic handles string manipulations very efficiently - between three and four times faster than ST BASIC (the interpreter) and two to five times faster than the Philon Basic-B compiler.

There also appears to be a lesson to be learned from the Sieve of Eratosthenes (called the Sieve from here on). The Sieve consists of sorted FOR-NEXT loops, object selection of start and end points, step size and a list of simple additions to examine a list of consecutive numbers for prime numbers. These results suggest that complicated functions are a lot harder to write efficiently compiler code for than simple ones. On the other hand, most real-world math modeling requires more than just simple addition, so perhaps the Sieve is not all that representative of what is needed for a numerical benchmark.

DRAWBACKS

The following drawbacks were noted during the review:

The instruction manual lacks adequate examples and there is no discussion of the sample programs on the disk. The runtime module does not allow machine executable code to be saved to disk. Instead, the runtime module is coupled to the object code and is automatically run every time before the program is executed. If the disk accessories are changed, the runtime module will not execute automatically, requiring a separate command to load it, then specify the program to be linked. This is time consuming and potentially confusing to a user of the program. There is no interpreter, making debugging very difficult in a long program. It will compile only about 78 commands from ST BASIC (out of 994); there is no provision for changing the screen, compiling basic graphics or compiling sound commands. However, graphics and sound can be accessed from the VDI and ANSI commands, but these require some considerable effort to master. Games written in ST BASIC will need a lot of modification to compile. There are only eleven digits of numerical precision, instead of the nine common 14-18 digits. Also, there is no true integer capability. Everything is done in floating point, slowing down programs that could be speeded up by integer declarations. The order of execution of statements is independent of the line numbers. So if you decide to add a line 45 and it follows line 50 in the file, it will be executed in that order. A minor point perhaps, but interesting.

Continued on page 45

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CARTRIDGES

Matthew Jones explains what they are and reviews a system for making them

WHAT ARE CARTRIDGES?

The Atari ST computer is equipped with one of the best ranges of I/O connectors of any personal computer, including parallel, serial, MIDI and DMA ports.

Independent companies have brought out software and hardware to enable you to make the best of each of these connectors with the exception of the cartridge port.

Eight-bit Atari owners will already be familiar with cartridges, a method of using programs on ROM (Read Only Memory) rather than loading them into RAM from disk or cassette. The 128K cartridge port on the ST is, however, both bigger and more flexible than the 8-bit machines' 16K cartridge and can contain more than one program. On the 8-bit Atari, each cartridge would eliminate the computer so that, when you had a four-Baudouin cartridge in, for instance, you could not also load a word processor from disk. On the ST, while the cartridge can take complete control in a similar manner, it may also be used in a manner similar to a disk drive (i.e. the program is only run when you choose to do so), or as a method for loading accessories.

So that's what a cartridge is used for, but what exactly is a cartridge? Well, it is quite simply a printed circuit board (PCB) with two or four ROM or EPROM chips, suitably programmed, with a case around it. An EPROM is an Erasable Programmable Read Only Memory, and it provides a re-writable ROM. ROMs are cheaper than EPROMs, but when you are developing a program you do not want to keep throwing away a chip costing five pounds every time you want to make a small change.

On one side of the cartridge is a connector which makes contact with a matching connector in the slot on the left side of your ST, and which connects the ROMs directly into the memory space of the 68000 processor. When the ST is booted (turned on) the operating system (O.S.) looks at this area of memory and tries to find a cartridge, taking appropriate action if one is found. Plugging in a cartridge and booting up will cause a new icon to appear on the desktop, very similar in operation to the disk icons, but with the identifier 'C'. Opening this shows you what programs you have on the cartridge. To run a program, just open it in the usual way. Note though that, unlike opening a file from disk, opening the cartridge program does not load it into RAM, it is run straight from the ROM and therefore it is exceedingly fast to 'load' and none of your RAM is available for data. Computer Concepts Fast ST BASIC is run by this method. (I understand Computer Concepts used the Nexus EPROM development system.) The program can be one of the usual types, i.e. APP, DOS or TTP. If the program is an accessory, it can be run by selecting its name in the DESK menu (DeskPack, a multi-purpose utility, also from Computer Concepts, uses this method).

Cartridges are obviously very fast to load and easy to use, so why are there so few about? The reason is partly that it is difficult to write a program to go into a cartridge, and partly that there has been no ST cartridge development system. Nexus has now removed the latter problem, and the rest of this article will review their development system.

NEXUS EPROM DEVELOPMENT SYSTEM

The Nexus EPROM Development System (hereafter called NEDS) is designed to provide a method of testing, simulating and programming EPROMs. Very cheap EPROM programmers that plug into the side of computers are available, so the question that must be asked is what can this system do that a cheaper system cannot? The answer lies in the rest and structure part of the description.

TESTING AND EMULATING

The NEDS has 64Kbytes of RAM on its 7 inch by 10 inch standard PCB, as well as two Zero Insertion Force EPROM sockets, two 28 way simulation header sockets and the required logic chips. The RAM is used to hold the program and/or data that you want to be programmed onto the EPROMs (programming of 128K cartridges has to be done in two stages). The clever part of the NEDS is that this RAM can be made to simulate a ROM, either on the host system (the one into which the NEDS is plugged) or, via the 28 way headers, in an external system. By either of these methods, it is possible to test your program in (simulated) EPROM without going to the trouble and expense of 'blowing' an EPROM, and then having to erase it if it did not work. The contents of the NEDS RAM will survive a reset and, for longer term development, can survive without power for up to two weeks.

IN USE

To use the NEDS, you must first plug it into the cartridge port, and then turn the computer on. You then load EPROM PRG from disk, and you are presented with a GEM dialog which contains a list of all the different EPROM types and programming modes available. NEDS will program these different types of EPROM (2764, 27128 & 27256) in one of two ways, and they can be in 8-bit (for processors like the 6802 or 16 bit wide modes (for the ST). After making this initial selection, a window is opened in which a memory dump of either the EPROMs or the simulation RAM can be obtained, and the same appear on the left hand side. These icons represent the EPROMs in the ZIP sockets; the simulation RAM (depicted as an icon of the four-legged woolly variety of RAM); a floppy disk; a screen; and an AUX (serial) port. These are used by dragging one on top of another. For instance, to program your EPROMs you would drag the disk over the RAM, select a file (which can be an INTEL hex, MOTOROLA hex, Hex space or binary type), a demo binary file is included on the disk) and then where the file is loaded, drag the RAM over the EPROM to make the permanent copy. The EPROMs can then be put in a cartridge board (which Nexus can supply). To see the contents of the EPROM, you drag the EPROM icon over the screen icon. The memory can be scrolled by viewing using the windows scroll bar.

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THUNDER Batteries Included/ Ariolasoft \$39.95

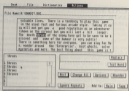
There are a few companies, and only a few, who you just know you can trust and Atari 8-bit owners will confirm that Batteries Included is one of them. All three previous Atari products have been of the highest caliber and their first offering for the ST—IMAGAS—has set the standard for other graphics programs. What does their first piece of "productivity" software? Is it up to expectations? You bet. Batteries Included has once again set the standard to which all other software products should aspire.

Thunder is a top quality professional spelling checker that can work as a desk accessory with GEM based word processors or as a stand alone program with virtually any other word processor on the ST. It gives you access to a dictionary of 50,000 words with the option of adding a further 2000 words. Although you cannot delete words from the main dictionary, there is a limited user definable supplementary dictionary and several sets of supplementary dictionaries can be built up for specific applications. You can choose from an option screen whether supplementary dictionaries are loaded automatically when Thunder is booted or load them yourself as needed.

As a Desk Accessory, Thunder will perform "real-time" checking which means that as you type a word it is checked and a bell sounded if it is incorrect. You then have the opportunity to move the cursor to the main line and correct the spelling from the alternatives suggested or manually. Personally I cannot see the benefit of such instant checking, except as a teaching aid, as it tends to slow down composition of a document to an unacceptable pace especially if you are not a trained typist. I prefer to get the text in as fast as possible and then check afterwards as you can then use global replacements and the like to speed things up. One feature which works well is when they call the "Learn dictionary" which allows you to teach Thunder your most common mistakes and have them automatically corrected. If, for instance you habitually type Atari instead of Atari you can teach Thunder the pair association and forget it. Likewise the program has the ability to expand abbreviations making it possible to use a form of shorthand. You could, for example use MFC for Manchester Brewery Corporation to save you typing it in full each time. The only thing to be careful of is that you cannot use accepted words as abbreviations otherwise you could find some rather peculiar documents!

I feel Thunder really comes into its own as a stand alone spelling checker. Almost any text file can be checked as most ASCII characters are ignored. The document is read from disk into a window on-screen which allows you to view the word in context. Each time an unrecognized word is found, it is highlighted and a bell sounded. Suggested alternatives are given in another window from which a substitution can be made with a click of the mouse. You may alternatively ignore the word, ignore repeats of the same word, change all occurrences of the word or add a word to the main or supplementary dictionaries. All with just the click of the mouse and with almost zero. It really is a joy to use.

Most of the time you will be able to correct spellings from the suggested alternatives, especially once you have



used it a few times and expanded the dictionary to suit your own idiosyncrasies. One of the things that sets Thunder apart is that the vast majority of the suggested alternatives are intelligent, certainly more so than any other spelling checker I have seen. It even suggests two words to replace one, in case you have created a space! It also recognizes whether the word being tested is in the upper or lower case or both and offers alternatives accordingly. There is no need to say much more about how Thunder works, it is incredibly easy to use, fast and efficient.

Another part of the program that can be called to check a document is statistical analysis with gives you character and word counts as well as sentence and paragraph analysis although the latter are not accurate on all word processors as they depend on reading ASCII carriage returns. Some words processors have their own peculiar line endings. The program will also tell you the "education level" of the document, based on established principles, and, while not strictly accurate it can be useful to know how complex your document is. It can also be fun, for instance, did you realize that some of the reviews of languages that have appeared in PUNCH require 18 years of schooling!

Before reading you away with a recommendation to buy, I must go through the niggling. Firstly, believe it or not, there are spelling mistakes in the main dictionary! Fortunately they are not the sort which will afflict your work, except by the remotest coincidence, and they only appear in suggested spellings. Things like cross-reformation and subreforms? The most frustrating thing however is coping with American spelling conventions. Although Batteries Included claims that the dictionary used is unique in that it can recognize both American and English spellings it clearly can't. All words that we spell with be such as recognize are shown as become the Americans spell them with a z. You do need to add a lot of words to the dictionary when you first use it. Finally, something of little direct importance but which intrigues me. Why did they not use Thunder on the manual? It is riddled with spelling mistakes. That's what happens when you use a program as good as this, you become ultra-critical!

Comments above aside, Thunder really is a top class professional program. If you write articles for money it is an essential tool. For anyone else who uses a word processor it will still be one of your most useful buys that will enhance you and enhance the quality of everything you produce. Thank you Batteries Included, my respect for your products continues.

CAD 3-D ANTIC Software \$48.95

I must confess that when I first saw this program I played around with it for a little while and thought "So what?" I had made the classic mistake of just reading the manual and now, having worked through the tutorial, I have to say that it is a very impressive program indeed. The view is reinforced by having seen some designs created by professional designers which prove that the program, although not a full CAD tool, can be used seriously as well as for fun.

CAD 3-D is basically a program which allows you to create three-dimensional objects from pre-defined shapes or freehand which you can then scale, size or rotate as you wish. The screen is divided into four windows which allow you to view an object from different directions and immediately see the effects of any changes. Objects can be easily duplicated within windows by selecting and dragging the desired object to a new position. Complex objects can be built up by duplicating and then joining several objects into one. Just how complex objects may become is demonstrated by an incredible model of Stonehenge which is included. Imagine being able to edit Stonehenge in all different directions and after the site is revised several! You may even be able to improve on that ancient design—assuming you know what it was designed for in the first place!

Objects are either selected from a number of pre-drawn shapes such as cubes and spheres which can then be altered or are defined in a two-dimensional plane and then translated or spun into three-dimensional objects. The process is remarkably easy and fascinating to watch as all the necessary calculations are performed by the computer. It is by no means instant fun, considering the amount of calculation involved, very fast. Models which you create can be viewed in several different ways. Wireframe shows all of the plotted points of the object but you may select hidden line, solid or surface and view all lines or edges only. Added realism is created, in solid mode, by the use of three different light sources which can be directed from several angles and at different intensities. The lighting truly

STAR STRUCK The Astrologer ANTIC Software \$34.95

Twenty years ago or so, when I first started work I borrowed a book from the library entitled *The Modern Handbook of Astrology*. It told you how to construct and interpret an astrological chart and I duly set about producing charts for workmates, family and friends. The charts themselves required a lot of work but were great fun and the interpretations were usually accurate, even for people I did not know. I had great fun for many months but eventually other interests came along and all my charts lay forgotten. Still kept but no longer used and I seldom thought about them again until this program came along.

Star Struck is a program to produce astrological charts for horoscope purposes and takes all of the hard work out of the process. You must still interpret the charts yourself but interpretation is a very personal thing, that is why it is so expected.

In case you don't know, two things are required to cast a horoscope—the time and place of birth. The place can be obtained in Star Struck by using the Longitudinal and Latitudinal coordinates of the birthplace taken from an atlas, which is by far the most accurate way, or by selecting a map and using the mouse. Two maps are available, the U.S.A or the whole world. Simply use the mouse to point at the approximate place and the

coordinates will be shown and can be input automatically. Time is selected from a comprehensive GDM based menu with options for different time zones and time variations such as Summer Time. Once these two variables have been entered you choose your chart type and it is drawn immediately. What used to take hours of research now takes only seconds!

Nine different types of chart are available too, although the program also includes some explanatory notes you will need to buy or borrow a book on astrology to understand the differences. Likewise, some brief notes on interpretation are included but don't try and interpret a chart from there, they are far too general. There is a lot more to creating a horoscope than you might imagine. Other options allow the aspects, planets and ascents to be shown in greater detail on the screen.

The manual is quite extensive but comes as a text file on the disk, you have to print it out yourself. This should however prove no problem as the prime purpose of the program is to provide printed charts and without a printer you will find its use limited.

Being those charts again brought back all the old memories of evenings spent working out those horoscopes many years ago. It looks like I may be going down the library again to see if they still have that book. If you are not already interested in Astrology, this program will be a godsend. If not, nip down the library and borrow a good text book, you could have hours of fun without all the hard work of drawing your own charts.

comes into its own when the object is viewed in colour.

Some other points to consider! Objects created can of course be saved to disk or printed out, although there are unfortunately no printer drivers so that only the standard Alternate-High screen dump is available. You can however save in DRGAS or MDG formats and to use other utilities on finalised objects. Animation is possible with a separate program supplied although this is fairly limited and up to date. If you are interested in animation though, AMTIC will shortly have a separate program available which can merge CAD 3-D images and animate them at drawing speed. Keyboard shortcuts are available for all the commands in the program for those who prefer to work in this way.

There are many other aspects and refinements which I have not been able to cover. A final warning in reviewing a product such as this is that I am not a professional draughtsman and will therefore inevitably overlook its strengths and weaknesses in the professional field. I am sure however that, considering its cost against established CAD programs, most professionals would find it useful and worthwhile, if only to check out ideas at home. The range is open to the designers imagination. It is certainly possible to design something like a vehicle chassis as I have seen such a demonstration. For non-professional users it will open up new areas of creativity and give many hours of interest in exploring the world of three-dimensional objects.

MAPS & LEGENDS Antic Software

Maps and Legends can be used for use plain fun or as a serious educational or business tool, enabling you to produce small scale maps of any area of the Earth. Before we begin, however, I must deal up a popular misconception concerning the Legends part of the title for those who might be disappointed to find that the program does not contain any heroic stories of myth and past adventures. The word legend in this context applies to detail on a map such as you would find representing roads and rivers etc. Its speaking to several people I was surprised to find that this was not generally known. Obviously one of those things, learned from Roy Secor days that you assume everybody knows and you die!

As far as the program goes, the Legends part appears to consist only of the State boundaries of the U.S.A. which is something of a disappointment but is understandable when you consider the enormous amount of other

detail that has had to be packed into the program to enable close-up views of any land area on Earth. To compensate, detail can be added to any map created by the program by using various Escherich drawing tools and custom maps can be created for various uses. In addition maps can be saved to disk in DEGAS format and enhanced with text or other graphics programs. The built in features enable many different world maps to be created using a number of different projections. It is a sure bet that you are unlikely to be aware of the many different ways of mapping the world and this program will enlighten you considerably. A map can be drawn viewed from any imaginary point above the Earth so that it can be centred on your home town or at any point on land or sea. Once the chosen centre in latitude and longitude is established the map can be drawn from any point above the surface from one to one of thousand miles or kilometers. Viewed from a distance of 10,000 miles the whole of the Earth's surface is seen while from the same co-ordinates you can zoom in to view just a portion of coastline. Sadly, as you

go closer the amount of detail becomes less and small islands such as the Canary Islands are hardly recognisable but when considering the amount of information required for such plotting, it is hardly surprising. All detail is held in memory and the only way to achieve four resolutions would be to load different areas in from disk. Maybe a more sophisticated version will have this facility. One other criticism that I have is that there is no facility to print out finished maps other than with the built in Alternate-Held screen dump. The only way to achieve a 'clean' print out is to load the picture into another program such as DEGAS.

Don't let these minor criticisms detract, however, from the overall use or enjoyment of Maps and Legends. As an entertainment it will give you hours and hours of enjoyment exploring different aspects of the world but it can also be used as a tool in presentations, projects and school work. Above all it allows you to be creative and, by using its built in co-ordinates, you can design maps of beauty and variety. Maps and Legends runs in both monochrome and colour.

FOUR FROM ANTIC

ANTIC Magazine has a good reputation in the Atari world. What about their new ST software?



Maps & Legends



ST 1983

RED ALERT Antic Software 1 Player

Red Alert is a combination game of arcade style action and strategy involving a theme that seems to be one of America's favourite phobias, nuclear war! from the divided Communist.

The initial scenario is an outline map of North America which you must defend for as long as possible against missile attack from the East, either across the Atlantic or over the North Pole. To add further interest the Russians have managed to slip the occasional submarine into the Pacific so you need to watch your back. At the beginning of each game you are given five rings to deploy laser bases and sites for ground to air missiles as well as cities to defend. This is where the strategy comes in, in building the best defence to protect your cities from destruction for the longest possible time. Laser bases are computer controlled automatic weapons and if cleverly placed will save you high scores without intervention on your part. Any missiles that do get through must be destroyed by using the mouse to launch ground to air missiles. You

also have a Space Cannon which is readily revealed to be used as appropriate. At the beginning of the game, at least on level 1, you can relax while your laser bases, if properly deployed, look after incoming missiles but as time progresses these missiles come faster and more thickly. There are 9 levels in all requiring more action and quick thinking on your part.

Generally a game does not last long, at least until you become an expert, but there is always a new high score to strive for as each successive high score for each level is saved to disk. Once you become expert in defending North America you can redefine the map to show Europe with the missiles coming from - guess where? Yes, it's those Communists again. Europe seems to be harder to defend as it is more congested and there is a danger of blowing up your own bases if they are sited too closely together.

I have to say that Red Alert is not a particularly spine tingling game and would probably appeal more to the less experienced game players. The main objective is to simply build a high score by last as long as possible before annihilation. It doesn't seem that you can actually beat the Russians, maybe there's a message there somewhere.

K-GRAPH

Kuma
\$39.95

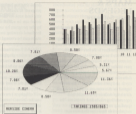
K-Graph is the latest addition to the K series of business applications for the ST and can be used on its own or in conjunction with K-Spread to produce graphs of many different sets and styles. While K-Spread itself does not match the power of VIP, K-Graph stands comparison much better. Indeed, in its range and ease of use it surpasses the graphing capabilities of that package.

As a stand alone package, data is entered and saved as a series of data sets using GEN to add or edit various items of data. Each set can be named and saved to disk for future use. Really that is all there is to creating the data for your graphs, it couldn't be simpler.

Displaying a graph involves load the appropriate data set or sets into memory for use as required later. Up to 20 data sets can reside in memory at any one time and up to 20 sets can be displayed on one graph. There is a wide range of graph types - Line, Vertical Bar, Horizontal Bar, Stacked Bar, 3D Bar, Pie and Overlaid Bar. The manual also mentions Scatter Graphs but this does not appear on the drop-down menu. To display a graph you simply choose the type and then click on a Menu option called Display Set. This allows you to choose which set will be shown on the graph. A further option is then displayed giving you the choice of shading or colour used for the data. The graph itself is then instantly shown. Further data sets can be added to a graph at any time by selecting Display Set again and choosing the appropriate data set. Changing the style of graph is easy, simply click on change and choose the appropriate type. It is done instantly. One disadvantage of changing graph types is that you are not given the opportunity to select the shading or colour which is used for display. To do this you must re-create the graph anew which, admittedly, takes only a few seconds for a single set of data but could prove cumbersome for more complex graphs. Another nuisance on changing is that you cannot return to a pie graph when you have selected another, you have to re-enter. This seems to be a bug associated with the restriction that you cannot use multiple data sets on a pie graph.

Titles can be added to any graph as can a list of text, three appear in 3-D style 'stand out' boxes and can be positioned anywhere on the graph simply by moving them with the mouse. Indeed the whole graph can be moved in this way to give you more creative freedom. The text can be 'locked' to point at any particular part of a graph. X and Y axes can of course be labelled as you wish. These labels can be created as will be menus be saved separately from the data sets which is a nuisance. The manual says that Data and Labels can be saved together but does not tell you how, at least I couldn't figure it out.

The patterns used for lines and fills can be edited and saved to disk, giving a wide choice of presentation style. In addition the whole of a created graph can be saved to disk in DIGITAL format for later enhancement with that or other



reviewed by Les Ellingham

packages. The Print option is excellent allowing a wide choice of paper size and giving the user the opportunity to select exactly the position that the graph appears on the paper. Certain control is possible over the size of the image. One drawback is that printing is only possible on an Epson compatible printer, a strange restriction since Kuma were the first to provide printer alternatives on a spreadsheet.

There are several other options and refinements possible which can add to the finished style of graph you produce. Additionally data can be transferred from K-Spread but I was unable to test this as it only works with version 1.24 or higher of K-Spread.

Overall the program is excellent but does have some drawbacks. One is that, apart from dumping the screen in DIGITAL format, you do not appear to be able to save a graph complete with labels, titles and text. A real nuisance if you have spent some time in getting things just right. The criticisms are really minor though and the program is a joy to use. It will add punch to any presentation you may require for your statistics and the ability to save in DIGITAL format means that you will be able to use other packages like Make It Move to produce the most stunning business presentations that your colleagues or friends have seen!

YOUR INPUT REQUIRED

We want to make the STage section of PAGE 4 the most interesting and informative source for the more dedicated ST owner. We therefore want to hear from you. If you have discovered anything interesting, have written programs, produced great graphics or can write articles please let us know. We will pay for any items used. We won't make you rich but your efforts will be rewarded and you will have the pleasure of seeing your work in a publication read by thousands of people all over the world.

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K-RESOURCE

Kuma

reviewed by Matthew Jones.

If you have an ST, you will have noticed that many programs consist of two files, the APP (or PRG) file and the RSC file which contains encoded dialogs, icons, and other GEM objects. I have in past issues reviewed several computers each able to create the APP application program file but, as I said in issue 11, this is only half the process of generating a GEM application.

A resource editing program is needed to generate the RSC file. The trouble is that until now, the only resource editors have been the Digital Research (DR) Resource Construction Kit (RCK) which suffers from bugs and design problems often making it unusable, and the rather limited Japanese version. Now come with expensive (and perhaps unnecessary) C compilers. To solve the problem Kuma have released K-Resource, an advanced resource editor which is available on its own.

THE MANUAL

K-Resource is packed in an 8 inch square folder and comes with a 11 page manual. The manual is in three parts, an introduction, an example, and a (relatively) large reference section. Like many manuals, this one only sets out to tell you what K-Resource will do, and how to use it; it does not really aim to teach you all about resources, what they are, how they work, and how to program for them - if you want to know that sort of information, get a copy of the ANTIC professional GEM series (1 through 13). The example takes the user through a very simple resource creating session, with 12 accompanying screen dumps. It is a simple demo, and I thoroughly recommend that anyone new to resource editors should play with it for some time. The reference section is quite thorough and explains all of the programs operations.

THE EDITOR

K-Resource differs from the two aforementioned editors in its basic operation by not having a window with all of the objects on the desktop which you copy into the single resource window to use. The K-Resource desktop is used very much in the same way as the normal GEM desktop (you can copy and delete files, create and open folders), but has been enhanced so that you can copy a resource file icon from the window (the disk) onto the desktop (representing memory) by dragging. By dragging more than one, you can edit several resources at the same time (something unique to K-Resource). When editing a resource tree (one is the icon used to describe the whole of a GEM 'part'), two types are: icons (dialogs), menus, free strings, alerts, and free images; you generate a new object by clicking a mouse icon which brings up a dialog with suitable possible parts. Click on one and you have it. This is easier than the drag from window used by the other editors and means you can use a 'Yanked' window if necessary.

The increased usability does not stop at the new icons

selection. When you have an object you will want to customize it (to change the text in a string, make it coloured or give it a 'macro' name for reference by the application) and a double click brings a large dialog with all the variables (other editors make you go to several places to make all the changes). Alternatively a single click produces a pop-up menu, but where the cursor is, with options available from: edit (like a double click), hide, enable, freeze, image, sort, and retype.

If you click on an icon or image, you can use a built in icon editor which is more convenient than having to use a separate one (though see later). The final option available is a new facility. Again unique to K-Resource, this allows you to do a simple test of your resource before you leave the editor. If you test a dialog, it will appear in the middle of the screen, fully animated, and allow you to click on buttons, edit strings, and use all the various parts to ensure correct operation. When you select an EXIT button or alert showing its number and name (if any) appears, and you can either continue or end the test. Similarly menus and alerts can be tested (anything unsuitable for testing, e.g. a tree with no exit button, is automatically unsuitable).

Error messages are provided in a very novel way. If you make a mistake, you do not usually get an alert, unless the erroneous item is surrounded by a thick, rounded rectangle linked to another box which explains the error. A very nice and useful touch, and one I hope others learn to emulate.

ADVANCED FACILITIES

K-Resource also makes some of the more advanced GEM resource facilities easily available. When DRJ defined the resource structure they left a few spare flags around for programmers to use for special effects. These extra flags (obscure, oblong and oblong high byte) are included in the K-Resource flag setting dialog.

PROBLEMS!

Unfortunately K-Resource is not without its problems. The first I noticed was that you cannot load icons from other icon editors (indeed you cannot load icons at all, only edit them). If you have to make two versions of a resource (the different resolutions, it is useful to be able to create a low resolution version from the high resolution file, by just loading in the correctly sized icons. This is partly solved by the fact that you can delete the old icon and then copy the new icon from another resource. This is risky though as it is critical that the order of the icons in the same file be the same as the resources if one application is to use both. Deleting and then copying is likely to alter the order.

The next problem I had was also with icons. I found it impossible to move a small image (an icon without a mask) just a fraction when it was at the bottom of a row. This is because as soon as I started to drag it, an erroneous 'shadow' was generated which fell off the bottom of the row and prevented me placing it back down again. Similarly, I found it impossible to drag an image box size to reduce its inverse-select area.

It may be that I make exceptional demands upon a resource editor, but another of the facilities I occasionally require is the generation of the C source code from which a resource can be recreated on another machine (an IBM for instance). Of the three resource editors available, only the

Digital Research version can produce the G source. I hope a future version of K-Rescue will give this option too.

The above problems may seem trivial, especially as most users will not notice them, but there are other more serious errors. K-Rescue occasionally has bugs, I'm not sure where, but it seems to be what you cancel an operation. Once hung, you have to reboot, and that means that you lost all your work. I also managed to lock the system in the test made by double clicking on a TOUCHEXIT button. The reason for this should be well known to the person who wrote K-Rescue (in this situation the high bit is set in the returned 'hit-button' value, making it seem negative), and it worries me because it is a basic mistake and there may be more I haven't found. It is obviously necessary to save your resources often.

CONCLUSION

While there are a few problems they are relatively minor when weighed against the advantages that K-Rescue gives you, and certainly less serious than those in the DRI editor. It really is much easier to use than the other resource editors, and is well worth adding to your set of utilities. Remember my reservations that you need other literature to tell you about resources and how to program for them though.

K-RESOURCES costs £19.95 and is published by Krom Computer Ltd, 12 Marston Park, Pangbourne, Oxon RG9 7PR.

REVIEW

INTRODUCTION TO

ST LOGO (A Tutorial)

Microdeal

£19.95

Mono/Colour

When the ST first appeared LOGO was included as one of the programming languages. The accompanying book was for reference and not a guide for beginners. Granted, many purchasers would want the high speed graphics of the ST coupled with the ease of LOGO and may well have used the language before but, on the other hand, few of people will have come across LOGO for the first time and may well have been daunted by the reference book.

This utility from Microdeal is intended to fill the gap. There is little difference in reading something from a book or reading it from a monitor screen, however, in a case like this a screen based tutorial wins hands down. You will read about the demonstration then see it displayed right away, or need to sit down and type in the demo program first, time consuming and boring! I have always been of the opinion that to demonstrate computer techniques, you have to show the technique on the computer then let the user fix and amend the program to experiment. Learning by doing is better than learning by reading.

The disk comes in the usual grey Microdeal two ring binder and is accompanied by a small (nine page) booklet

explaining how to set up the material. It includes a list of all the lessons and topics, a good idea as you will tend to forget the chapter and lesson number that you are working with.

The tutorial is better run on mono, though there is reference to colour in one of the demonstrations. I normally use a colour monitor and I found some of the screens to have a bad choice of colour, making it very hard to read.

LOGO is a language that I have read about over the years without taking any interest in it. I decided to have a go when I bought the ST, but the book soon put me off. This tutorial is, however, very good, it even lets you type in commands and watch the results, although you can only type in what you are told to. This stops you fiddling about and losing the thread of the lesson. If you really want, you can edit the program and try out the programs with LOGO itself.

I found the lessons were very easy going, understandable and with good graphic examples. I got through the first half of the tutorial in very quick time. You tend to do this because you understand everything at the time, but you will have trouble remembering things later. It is really necessary to practice what has been shown to you, to use and amend the examples provided and to write your own programs.

This is really aimed at the beginner and is well constructed. I do not know how you will feel about the price, but I consider it well worth the money not to have to sit down and type in a lot of programs! Also, from personal experience, I know how much time is involved in writing such a (surprisingly) short and easy program.

Mark Hutchinson

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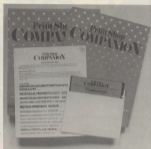
THE PRINT SHOP COMPANION Broderbund

If you've heard the old adage "equals are rarely equals" then you see the *The Print Shop Companion* is one of those equals that not only equals but in fact adds considerably to the original. When the Editor offered me the opportunity to review this package, I couldn't wait to get my hands on it. At last, I thought, an enhancement to the much used *Print Shop*. I won't make you wait until the end of this review to let you know whether it is a good offering or not. The answer is a qualified yes. Before you drop what you're doing, however, and go out and buy it be warned that it will only run on 484 K, and XE models.

Print Shop Companion is designed to complement the *Print Shop* and if like me you've struggled to create quality items, worried about the borders, colors in the fonts and wondered what on earth to do with *The Magic*, then despite no longer - help is at hand. The *Print Shop Companion* has six sections. Using the tried and tested mouse approach, it smoothly allows you to take control from booting up the disk. The first requirement is Program Set Up - similar to the original. It asks the *Print Shop* to be placed in the drive so it can verify the disk to accept true "compatibility". All this does really is, a) save the background colour from Atari blue to black and, b) add a command to the graphics, borders and font files so they will accept the *Companion*. It also obtains details about your previous configuration from the original disk. Once this has been achieved it on to the main menu.

The first section is the new Graphics Editor +. Based on the original it has 18 new commands and, without going into full detail, it's fair to say that the majority of commands seen in most graphics programs are available. Worth mentioning are - scrolling pictures, grids, patterns, mirror, flood fill, negative, size, use and superimpose. A notable omission from the editor is the wrap-around which was quite a handy feature in the original, however the new commands really make up for it. The cursor now moves faster on the screen and as before you control it by joystick, keyboard or light pen, which has no set up any easier to use. The text is only one size and in the standard Atari font. In all, the graphics editor + is a vast improvement on the original and really is a pleasure to use.

Leaving the editor and returning to the main menu is instantaneous as the program makes use of the XL/XE extra RAM. The next section is the Border Editor, which consists of three editing boxes where you can modify existing borders from the nine in the *Print Shop* or any of the fifty stored in the *Companion*. The edit boxes are truly a smaller version of the original Graphics Editor (*Print Shop*) and are just



reviewed by Alan Goldsbro

about as difficult to use. The boxes represent: 1) the corners, 2) the top and 3) the sides. As you draw the area around the edit boxes is filled in, either across the screen or down the side depending upon what edit box you are in. Extra commands are flip horizontal/vertical, negative colour, flip top/bottom, flip right. One feature which isn't available is the opportunity to 'get' an icon and place it in a box to use as a border, this could make the border editor really something! A compression is the ability to copy the current edit box to the other two.

The Font Editor is the third section and again you are presented with another editor box and the opportunity to either edit the existing eight fonts from *Print Shop* or any of the new ones from the *Companion*. Creating a font is a multiple step process. Select your font from the existing ones in stars from the standard Atari reference font. Create or modify it you like (or not). Save them temporarily in memory and then save the entire font in your data disk. This is handy when you want that elusive pound (£) sign, yet after any character is suit and store. If you use the reference font you can select this in any of three sizes however you prefer, unfortunately, do this with the other fonts. A number of the Editor + commands are available with extras such as Under, guide lines and reds. As you work, the necessary need to creating a font is displayed. If you are creating a large font with embedded letters then you may have to work on the alphabet in two goes, for example on a small font the memory used is 27%, and a large font could easily be 90%. With every extra pixel used, it could really push you over the top. One other feature is the unusual Flip Backward, you can create your own backward font (as the reading is mirrored).

15. The

SLAVE

Let's suppose that you've played a few Adventures. You've been bitten by the "Adventure bug" and you decide to have a go at writing an Adventure of your own. You've got a few ideas floating around in your head and the programming side of it doesn't seem too difficult. After all, it's just text input and text output, right?

The ideas begin to multiply and conflict with one another, but as they resolve, only the best ideas survive. After a little more day-dreaming, you come up with an original theme. You sift out the most intriguing puzzles from the back of your mind and devise a cunning trap on the back of a sleeping lion. This game is going to be brilliant! When you unleash it onto an unsuspecting world, they will herald you as the greatest Adventure writer of all time.

Now all you've got to do is put all the pieces together and write the code. It has everything collapses in a heap. How on earth do you even want to write an Adventure program?

Writing an Adventure is quite a monumental task, but it is not difficult, just tedious. If you are serious about writing an Adventure (whether for fun or profit), there are probably three approaches you could take. Firstly, you could do an immense amount of research into human psychology, database design, parsing techniques, artificial intelligence, computer design and so-on and hopefully write a complete Adventure from scratch in the language of your choice. This may take as long as two years, so you'd have to be pretty dedicated. I have taken this approach in my own spasmodic Adventure writing pursuits and some of my research notes are over five years old!

Secondly, you could take a liking of an existing Adventure, decipher it to see how it works and modify the database and logic processing parts to create your own game. There are a number of books and magazine articles that you could use to help you along the way. A friend of mine followed this approach but recently by following an *ADVENT* listing and came up with quite an impressive Adventure in just a few weeks!

Thirdly, you could use an Adventure writing utility. There are a number of these around including commercial products such as Adventure Master and Adventure Writer or the more primitive public domain offerings such as Max Manusoff's Adventure which is available from Acme, Page 4 and various user groups. That brings us to the subject of this month's column, The Slave.

THE SLAVE

The Slave is the latest offering in the area of Adventure writing utilities available for the Amn 400/500/XL/XL. The hype in the advertisements made it out to be the greatest thing since the ring-pull beer can. Unfortunately, this is just not so. Writing Adventures is downright hard work and The Slave doesn't make the job any easier - you just do things differently. It is a tool to help you get the job done. Nothing more, nothing less. Once you've accepted that fact, you are less likely to be disappointed with the product.

The creative aspect of Adventure writing is still up to you. No Adventure writing utility will help you design an Adventure - and neither should it. You must create the plot, draw the map, design the puzzles, select the vocabulary,

create the characters, write all the room and object descriptions, predict the player's actions and decide how to handle them. If you can't write, can't spell or can't design logical puzzles (and logical solutions), then Adventure writing is not for you. If you fall into this category, then you might as well stop reading right now.

For those of you still with me, I hope I've satisfied your expectations so that you don't expect too much from The Slave. Now, let's get down to the nitty gritty evaluation.

FIRST IMPRESSIONS

I was bubbling with enthusiasm when the editor told me that The Slave was on the way for review - I'd never been sent anything so review before. When it arrived, I couldn't wait to get started. I slipped the parcel open to find a disk and a bulky manual. The leading instructions said to insert The Slave disk and turn on the computer. When I did, I was rewarded with a screen full of garbage! Hey, what's going on here! When I double checked the instructions, I found a paragraph AFTER the leading instructions which told me that I needed BASIC. Shame!

I rebooted with BASIC.

This time a rather impressive GRAPHICS 8 bit screen came up accompanied by a "lovely nice little tune, totally out of character with the screen display text". At least that's how the manual described it.

When the tune finished, another program loaded and I was presented with a GRAPHICS 0 menu in Atari's default font. None of the options made much sense, so I started at the top to see what would happen. Another program loaded. Another menu presented itself in default font. And again, nothing made much sense. After experimenting a bit, I was able to achieve not being except considerable apprehension because of the way the disk drive kept turning on and off for no apparent reason. I tried to get back to the last menu, but couldn't. It turns out that you have to select the pressing SYSTEM RESET and repeat the title page over little tune sequence.

The next time around, I picked a different option from the main menu and ended up in the same state of confusion. It looked like I'd struck a dog. At this point, I rebooted the system with many old DOS 2.0 and did a disk directory. Nothing! It was time to heed the old leader's proverb, "If all else fails, read the manual".

THE MANUAL

The Slave manual consists of 126 pages of blurry, draft quality, dot-matrix printing (without lower case characters) printed on single-sided, creaser fold paper. In other words, a lousy job. But that's okay. I've got a lot of respect for

by Garry Francis

anyone who tries marketing their own product — PROVIDING THEY'VE GOT A PRODUCT WORTH MARKETING!

A first glance at *The Slave manual* was encouraging. It had a good contents page and everything appeared to be laid out in a logical order. Little was I to know what the future held in store.

If you ignore the author's tendency to put himself in the back, then a couple of the early chapters made interesting reading. These early pages also told me what I'd already learnt the hard way, namely that *The Slave manual* is essential to learn how to use the program. "Ignore it at your peril — without it you will go nowhere very quickly indeed." This advice should have been placed all over the front cover!

I spent the next week reading *The Slave manual* from front to back. Mind you, this was done while travelling and from work and some parts of the manual were virtually impossible to follow without a computer in front of me. By the time I'd finished the manual, I felt like saying "So what".

My initial impressions had been misleading for the manual turned out to be neither laudable and broke many of the rules of good documentation. For example, it was not broken down into small manageable chunks, it did not flow properly from section to section, and there was no indication of how the minor parts fit into the whole. Nothing seemed to make sense.

THE SAMPLE ADVENTURE

It struck me that the next step was to try and run the sample Adventure referred to in the advertisements and the manual. The manual didn't actually tell you how to do this, but I thought I'd be able to work it out with a bit of trial and error. By this time, I'd discovered that the disk was formatted using DOS 3.0. (Why on earth anybody would want to use DOS 3.0 is a complete mystery to me.)

Anyway, I re-mounted the disk and found that it had 15 files. The purpose of these files wasn't mentioned anywhere. I could see that I was going to have to do this the hard way, so I started out by copying all the files to DOS 3.0 using Matthew Jones' "Access III" from page 8 issue 14. Lo and behold, the program wouldn't run in DOS 3.0! I wondered why.

When I examined the files, I found that five of them were written in BASIC. Hmm. Maybe I could traverse through the listings, work out what they were supposed to do and why they wouldn't work in DOS 3.0 and perhaps make a couple of little changes so that they made more sense. I particularly wanted to avoid the robot every time you tried to return to the main menu.

Unfortunately, the author had put some protection in the programs to avoid these being listed. It was all pretty standard stuff so I promptly proceeded to unprotect them. During the process I discovered that the programs had been written using Revision II BASIC. This was evident by the way the programs had "opened" each time they had been saved. By fiddling with BASIC's save page pointers, I was able to "link" the programs back to their proper files. I also discovered that the author used some pretty sloppy programming techniques (such as premature exits from FOR...NEXT loops) and that two of the programs had not been through the standard LIST, NEW, ENTER procedure to clear out the variable name tables.

I realise that all this is of little or no interest to the end user, but it showed all the signs of an amateur. I was building up a very strong image of *The Slave's* author and it wasn't very favourable!

Once everything was all cleared up, I was able to work out how things fitted together. With my own limited knowledge, I cross referenced all the files with the menus in

the manual and started to see the light at the end of the tunnel. Then I was struck a crushing blow. I suddenly realised that there was no sample Adventure! Blasted hell! Talk about false advertising! I was chastised.

THE SLAVE

By this time, I'd wanted a month or so (in between other projects) just trying to understand how *The Slave* was supposed to work and I still hadn't written so much as one byte of an Adventure! The deadline for this review was rapidly drawing near and I started to panic.

I couldn't sleep. I couldn't just study the sample Adventure (because there wasn't one) and I couldn't think of any other shortcuts. There was nothing for it but to write an Adventure from scratch and try to get it running with *The Slave*.

Luckily for me, I love writing Adventures. I've written a few before and knew exactly what to do. I abandoned this one "baby Adventure" because of its size and came up with a core file map, an objective and a couple of fairly straightforward puzzles. Once the Adventure was designed on paper at least, the next step was to turn it into a program using *The Slave*. I did so with a great deal of apprehension.

I started at the beginning of the manual and worked through it very slowly and very cautiously. It rarely presented anything in a logical order, so I had to constantly flip forwards through its pages in search of the missing instructions. In many cases, the missing instructions were obscure, ambiguous or weren't to be found anywhere.

While building my Adventure, *The Slave* constantly did things that I didn't expect, like adding bits that I didn't want added. Whenever this happened, I backtracked and tried again. And again... and again... until I eventually got it right. In fact, I started the entire Adventure from scratch at least three times!

When the Adventure was finished, *The Slave* completed it without any complaints, but it wouldn't run. Don't ask me why. I'm sure I did everything properly, but the manual is so vague on some points, that I couldn't be sure. In the end I gave up in despair. If I had pushed on any further, I'm sure I'd have had a nervous breakdown and I didn't think it was worth it.

A TYPICAL SESSION WITH THE SLAVE

Despite my inability to get the Adventure running, I was able to see out most of *The Slave's* illogical menus and its obscure way of handling things. Here is a brief account of what to expect.

Begin by making a backup of both sides of *The Slave*, then put the original away in a safe place(s). Side 1 contains all *The Slave* programs and side 2 contains DOS 3.0 and all its support files. You will need to use both sides during a typical session, so you might want to save yourself some disk swapping by copying all the DOS 3.0 files onto side 1. Before you start writing your Adventure, format three disks with DOS 3.0. One is needed for all the user files, one for all *The Slave's* working files and one for the final game disk.

Boot *The Slave* and use for the main menu to load. This has 9 options as listed below:

Descriptions editor
Edit editor
Flags and object locations
Compile adventure code
Vocabulary compile
Sound editor
Resource data files
Header creation
BASIC mode

Each of these options except **REARRANGE** data files loads another program, so the normal sequence of events is to make a menu selection, wait for the program to load, remove The Slave disk, insert the appropriate data disk, do some editing, save your work to the data disk, remove the data disk, insert The Slave, reboot the system, wait for the main menu to load and repeat the whole process over and over again until your Adventure is finished.

The descriptions editor is nothing more than an extremely primitive editor which you use to enter all the text that will be output by the game. The Slave divides this text into four files (which are not DOS compatible) for messages, objects, locations and rooms.

The slots editor allows you to create the map for your Adventure into a DOS 3.0 file called **EXITS.SLV**.

The flags editor allows you to set up flags, initialize the locations of objects and decide whether an object is movable or not. This information is saved into **PLANS.SLV**, **ORLOC.SLV** and **IMMOVBL.SLV** respectively.

The most complex part of the Adventure writing process is the logic. The manual warns that "the faint of heart should turn back now". The Slave handles logic in the most cumbersome way that I have ever encountered in an Adventure writing utility. You must write the logic in a sort of pseudo language that the author calls Slave Adventure Language. SAL writes me as being a horribly disorganized mess. It is somewhat similar to a job control language on a mainframe, but less logical. At first glance, the range of commands looks pretty impressive, but a closer look reveals that many of these are necessary to account for The Slave's other limitations. The Slave makes you write the code for the entire program, not just the processing of actions as with other Adventure writing utilities. So how do you write with SAL? Hang on to your hats. You're going to love this one! You must first go to BASIC and type in your SAL commands within BASIC DATA statements! That's right...in BASIC! I couldn't believe it! Talk about a half-baked product! Why not just write the whole thing in BASIC in the first place!

Fortunately, there is a sort of skeleton set of DATA statements included on the disk which you can use as a guide. Once you've finished entering your SAL commands, use the file using LIST "D-SLAVE.txt". You must use SLAVE as the filename, but you can use any extension except XXX.

This has a special purpose as discussed below. You can now use the main menu option labelled compile adventure code to create two files called **DATAFILE.txt** and **DATAFILEXXX**. This is why you can't use XXX as an extension.

You must go through a similar process of writing BASIC DATA statements to define your verbs and nouns, then use the vocabulary compile option to create **VERBS.SLV** and **NOUNS.SLV**.

The next item on the main menu is the sound editor. I think you can skip this one as a first timer.

The message data files option goes through a lot of disk activity, but I don't know what it does.

By now, you should have one disk with the text for messages, objects, locations and rooms and a second disk with all the following files:

EXITS.SLV
PLANS.SLV
ORLOC.SLV
IMMOVBL.SLV
DATAFILE.txt
DATAFILEXXX
VERBS.SLV
NOUNS.SLV

Go to DOS, copy SLAVEDISK1.VBR from The Slave

disk to the third blank disk, then append all the above files to it. This takes about 18 disk swaps!

Finally, the loader creation option allows you to prepare a GRAPHICS 0 title screen and write a loader to the disk you just created with the expanded **SLAVEDISK1.VBR** file on it. If everything has gone to plan, you should now be able to boot this disk. If everything hasn't gone to plan...

A FEW OBSERVATIONS

The Slave is not for beginners. Don't even THINK about using it unless you're an experienced programmer and you have a thorough understanding of how an Adventure works.

Using The Slave turned out to be a disk swapping nightmare. You need five disks to create a game and must constantly swap amongst them. Having two disk drives is of no benefit because The Slave only supports one drive.

Flags are used so frequently in Adventures that I normally associate a flag with every object. Thus flag 1 is used for object 1, flag 2 for object 2 and so on. Unfortunately, The Slave's system doesn't allow this flexibility. Flags 0 to 29 are reserved for special purposes and therefore can't be associated with objects 0 to 29. You can either start numbering your objects with 30 or forget about any one-to-one flag to object association. If you adopt the latter course, your logic in the processing of verbs will need some tricks and be much harder to follow.

Unfortunately, The Slave also fails to provide flags for rooms. These are normally used for functions like "Does the room contain water?", "Was the thief ever in this room?", "Has the player visited this room before?" and "Is the room dark?". These will have to be simulated using extra code in the logic processing part.

The final Adventure is a totally disk based and seems to always take two disks (or two sides of one disk) regardless of how big the Adventure is. I couldn't get my Adventure to run, but it certainly appears that ALL text is read from the disk only as needed. None of it is kept in memory. You know what that means...lots and lots of disk activity. I love disk intensive Adventures!

SUMMARY

I mentioned earlier that the author of The Slave had a tendency to pat himself on the back. This got me really angry while I was waiting to get the program to even work, but it was brought to a head by the following paragraph:

"Slave Driver is thus the master control program, the 'guts' of the Slave system, and, deserving credence to the four words, is quite brilliant! Anyone out there want to argue? Yes! I want to argue!"

The Slave is a dog of a program. The only feature it has is consistency. It is consistently bad! In fact, in my six years in the computer business, this is unquestionably the worst single piece of software that I've ever been unfortunate enough to encounter on ANY computer. It should never have been released. It is obviously a backyard product written by an amateur. It has the worst user interface and the worst human engineering that I've ever encountered and obviously has no regard at all for the end user. I doubt that it's even been tested. In fact, it strikes me as a half-baked product that's still in the experimental stages.

As an Adventure writing tool, it makes a good drink mate. It doesn't come within a ball's row of other Adventure writing utilities - even those in the public domain. On a score out of ten, I'd give it a one...and even that's being generous!

If you're serious about writing Adventures, this product probably won't help you. You'd be better off buying a good book on the subject.

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HOW THE PROGRAM FLOWS

0100 - Initialization, Opening Channels, and graphics plus screen and keyboard codes.

0200-100 - Drawing menu (MENU) and screen.

101-110 - Transferring all of the program files from the disk.

111-120 - Sorting in Alphabetical order the program files.

121-130 - Printing program title to the main page, in alphabetical order with necessary single key codes.

131-140 - Printing % choice of MENU program and separating by space.

141-150 - 1st choice, Load-line section, LOADLn and then R1/N the requested program.

151-160 - 2nd choice, RUNn, DELn in editing program on the disk, using DEL.

161-170 - 3rd choice, UNDELn in editing program on the disk, using UNDEL. Usually you can edit the deletion.

171-180 - 4th choice, LOCKn in editing program on the disk, the user saves program, with the % choice.

181-190 - 5th choice, UNLOCKn in editing program on the disk, using UNDEL. Usually you can edit the program.

191-200 - 6th choice, AUTORENn in editing the disk and R1/N the requested program automatically. The entry continues if menu not be there then the screen and probably no question marks be used.

RICK HANSON

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Books

ELECTRONIC COMPUTER PROJECTS

Compute! Publications
£8.95

Many of the 'old hands' at Atari computing came into the hobby several years ago when there was not much available in the way of peripherals and accessories and they often already had a background in electronics so that amongst several specialist interests was that of the 'hardware hacker' who built his own equipment. There has always been an interest in adding home made projects to computers but there has never been an easy guide for the electronics 'newcomer'. Until now, that is.

Electronic Computer Projects is the ideal introduction to hardware projects for any Atari owner even if he has never picked up a soldering iron before. The book takes you step by step through all the steps required to build your own joystick, paddle, sensors, switches, bumper alarms and more, starting from the very beginning and explains in detail different methods of building a circuit and how to use a soldering iron. Most of the projects in the book use a 'solderless breadboard' but you will need to do a little soldering. For now, a step by step guide is included for those who have never soldered before.

Introductory chapters explain how the computer and the joystick parts work before the first project, a simple logic probe, is tackled. Each project has a list of parts, including part numbers, which can be obtained from any Tandy store

followed by detailed step by step instructions for construction. As various points special notes are included to explain the reasons for certain actions in greater detail. Where extra care is needed, that too is explained. Finally the procedure is given for testing your project. If a program is required to operate the hardware, a simple but effective listing is given. Every procedure is carefully explained and considerably easy to follow.

The main projects include two types of simple joystick and importantly, now that they are no longer available, game paddles for those excellent games like *PAIDE 4*'s *BREAKOUT* that require them. What is more you can make these yourself for a fraction of the commercial cost. More advanced projects include a light pen, sensors that can detect movement or light and even a full scale burglar alarm. With these simple projects you can switch on lights, control model railways, drive circuits, control robots and more.

The book is excellent value at £8.95 and, whilst aimed at beginners, will provide information to any owner who wishes to try his hand at interfacing his Atari to the outside world. You will have hours of fun with these projects and, when you may not realize, you can do so at very little cost. Most of the parts required will cost no more than a couple of pounds to total and some projects might cost only pence!

An event NOT to be missed!

Atari Christmas Show

Royal Horticultural Hall
Westminster, London SW1

Friday November 28 10am-6pm

Saturday November 29 10am-6pm

Sunday November 30 10am-4pm

The first ever Atari Show last spring was an outstanding success. From all over Britain Atari enthusiasts flocked to London to find out all they could about their favourite machine.



Soon the record-breaking Atari Show will be back - with three days devoted to the exciting developments in this expanding market. Make a note in your diary NOW to make sure you don't miss this great Christmas extravaganza!

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- New hardware releases from Atari and other major companies
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- Experience the fascinating world of computer communications
- Everything on show from stocking fillers to complete Atari systems

Whether you're a new user or a seasoned addict, you'll find the show overflowing with ideas to help you expand your computing horizons!



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SHORT REVIEWS



SAVAGE POND CLOAK OF DEATH

(both Bug Byte)
48K Cassette \$2.99 each
1/2 Players
1/2 Joystick Keyboard

Bug Byte are a company who have been producing computer software almost since the dawn of time. In the early days they concentrated on machines like the Vic-20 in cassette-drive unique units which is, thankfully, no longer with us! But now, in their infinite wisdom, they have gotten round to producing Atari software as long last. Slightly misleading in the case of SAVAGE POND though, as this is an old Scavade game and Bug Byte have acquired the rights to this game rather than produced it themselves.

In SAVAGE POND you control a tadpole, of all things, and your aim is to try and build up a healthy colony of frogs. Worms, dragonfly eggs and amoeba have to be eaten (and a few I'd fancy) in order to stay alive and continue along the path of evolution and, finally, you reach the serious business of frog-breeding. As the same applies, SAVAGE POND is far from friendly and hazards abound. Firstly there are vicious predators such as hydra, jellyfish and venomsome dragonfly nymphs who regard a tadpole in much the same way as we regard a fat steak, spiders, waterlilies, bloodworms and other skin-irritating nasties. And then there's Mother Nature's deadliest enemy (as you find) equipped with a fine stream of radio-active waste to pollute the water - you've guessed it... this pond's slightly less alive to Nehalem! After making a robust attempt to build a though all this the best advice I can give is, if you believe in reincarnation, there don't come back as a tadpole!

SAVAGE POND has been available for as long as I can remember but there are possibly many new (and) owners who have never heard of it, plus one or two of the older ones! It deserves more recognition if only because it owes originality - there's not another game quite like it. SAVAGE POND is up there in terms of computer software. It doesn't fit into any set category (platform, about 'em up,

New Releases

Re-releases

Jim Short

looks at them all



adventure etc.) so it can never become unobtainable. Under Bug Byte it costs at a pearly £2.99. Before me, it'll be the best three pence you'll ever spend!

Also wanted for review - CLOAK OF DEATH, which is a graphical adventure written entirely in BASIC. The scenario is a familiar one. You've drowned too many times at the local tavern and, full of Dutch courage (not to mention Danish lager), you agree to spend the night in an old house which has been empty for 50 years. The door slams shut behind you and, try as you might, you can't open it again. And so the scene is set...

The program requires 67 verbs and 94 nouns and, as adventure's go, it is reasonably tough with lots of head-scratching puzzles to solve. The graphics can be turned off for those who regard them as wasteful, but you're truly puffed them on as they add some extra interest to the game.

Lots of very good text adventures are available in magazine listings - including Page 8's ones CASTLE MORGUE - and I feel most people would think twice about linking our money for an adventure written in BASIC, despite the addition of the graphics. At least the price is right and at only £2.99 it must be worth considering.

MERCENARY - THE 2ND CITY

Novagen
64K 48K Disk \$9.95
64K 48K Cassette \$5.95
1 Player
1 Joystick Keyboard

The initial release of MERCENARY brought with it the promise of an immediate follow-up. Well, Novagen have been true to their word and MERCENARY-THE 2ND CITY has arrived. It takes the form of a disk-set and can only be played by the owners of the original MERCENARY package.

You must first load the main program as normal and then load THE 2ND CITY in much the same way as you would a "Save Game". You will gather from this that THE 2ND CITY is written on it's own and something to watch, the disk and cassette versions are not compatible with one another. The first thing you will notice once loaded is that the planet has changed colour from green to red with a harsh crimson skyline in match. At first it's fairly difficult to find anything else different about the game as everything tops along in exactly the same way as it did in MERCENARY I - same locations, same streets, same job offer, same buildings, same city, same elevator, same hangar, same briefing-room, same message from the Palvers - and then, as long last, things start to get interesting! Pretty soon you will discover that the underground complex is not the same underground complex of old. This one's full of new and exciting surprises and is a whole lot tougher than it's counterpart in MERCENARY I. Unlike me to be able to elaborate on that but I keep colliding with a mysterious alien which sends me spinning, as if through a time-war, out into space and back to the start of the game again, minus a ship! Yes, something tells me that escape from THE 2ND CITY won't be quite so easy as escape from Tang (who says) escape from Tang was easy! Thanks up all those who managed it without sending for the Holy Shrivels.

MERCENARY add-ons will love this one, but it's more or less an extension of the original and not a new game in itself. Those expecting something completely different could be disappointed.

SMASH HITS 5

English Software
48K Disk(2) £14.95
48K Cassette(2) £9.95
1-2 Players
1-2 Joysticks

No new ideas from English Software this time. Instead we have another in a long line of compilations, entitled SMASH HITS 5, which is a logical progression from their previous four. This one comprises CHOP SUEY, ELEK-TRAGLIDE, MEDIATOR and QUASHWOOD and the review sample came as a two disk set with the same planned for the cassette format.

CHOP SUEY is English Software's popular action game and has been on sale for many months, being the first game of this type readily available for the Atari. English Software obviously regard it in the same high esteem as Jet Set Jack as it was featured in their HITS 4 compilation. An excellent game which was reviewed extensively in issue 19.

Next up is ELEKTRAGLIDE, the futuristic race game featuring stunning 3-D graphics. You either love it or hate it, depending on how difficult you find it. I happen to think it's totally unplayable but I have it as good authority that there are many gamers out there who consider it a pushover - the type of people who can score 10 billion at arcade houses, mind-boggled and with both hands tied behind their backs! These same people even write to let me know what an idiot I am for not being able to play the LAST VIX (see review in issue 21).

MEDIATOR is an arcade/adventure game with ever-changing scenarios. It starts off like one of those boring Minibanker type games, but stick with it and it gets better and better as you progress through the different screens with lots of intriguing puzzles to solve along the way. One of English Software's better efforts.

QUASHWOOD is a strange offering as it is not one of E.S.W.'s own games and came to us originally from Spangley Software via US Disk! Despite the obvious implications of the title it is not a variation of arcade Hackback. The usual stage are very reminiscent of Thor-Rex's 'Ore Attack' as Quasi bashes rocks from the top of the cathedral walls in a effort to knock down the pursuing guards. After that it develops into a fairly routine stage in which you must try to recover three stolen jewels which are scattered around the belly somewhere. I managed to recover two of them but these 'pokey' bits in the belly prevented me from recovering the third. No doubt somebody will write to let me

no know they completed the whole thing in five minutes flat!

So there you have it. Another excellent compilation and, in case, superb value for money especially if you don't already have any of these four games in your collection.



COLLAPSE

Firebird
48K Cassette £1.99
1 Player
Joystick

Finished and ready to go for this budget software on other computers, namely the Spectrum and Commodore 64 than on the Atari. They first entered the Atari market with CHIMERA - a brilliant game based loosely on Ultimate's 'Alice F' and one of the best of the 'yummy' Atari releases - and COLLAPSE is their own Atari effort to hit the high-street shops, resulting in an incredible £1.99.

COLLAPSE is a simple game in the arcade mould. You are presented with a grid-screen made up of grey stiles and bridges. You must guide Zen the bear around the screen, changing all the grey stiles to blue, before using his magic to sit a 'bein' into action to make all the stiles collapse on top of one another. Once all the stiles have been cleared you advance onto a new screen. There are 10 different screens in all.

A couple of exciting items - no self-respecting arcade game would be the same without it's quota of items - hinder you at every turn, but you can keep them at bay with a liberal dose of 'popper dust'. Extra popper dust is available from all good supermarkets - sorry, I mean at random intervals throughout the game. Oh, and there's a timer too. Extra time can be gained by collecting the occasional diamond. Bonus points are awarded for collapsing the matrix in one go, but this is no mean feat. And that's about all there is to it. Like I said, simple but addictive in the purest of being annoying! The graphics are distinctly Spectracolor and the game characters have jumped straight out of Jet Set Willy (oh no, not that game again!) but at least Firebird are trying and that's more than can be said for certain others.

Miss Firebird games are planned. At this standard and price they are not to be missed.

A DAY AT THE RACES

Red Rat Software
48K Disk £9.95
48K Cassette £7.95
1-2 Players
1 Joystick, Keyboard

The thrills and spills of the race track at home. That's the general idea behind this release from Red Rat. TV racing now downloaded by Red Rat. TV racing coverage may be confined to a Saturday afternoon but you can enjoy the luxury of a continuous race-racing screen every day a week. Fifty-two weeks a year simply by switching on your Atari!

The action takes place at the mythical Ascot Downs and features a full day's two-card covering 10 separate races. Up to five players can take part and, after all the names have been entered and handily selected, you are then invited to place your bets with House Rat's Turf Accountants (shown as horses in Arthur Daley, 1 bet!). Every race carries five runners. The program boasts a database of 100 horses, each assigned it's own name, colour, strength and odds. It is, therefore, possible to study form and improve your chances of picking a winner in the race drawing. A likely story!

When all bets have been placed you are treated to a computer simulation of the race in the horses gallop from left to right across the screen towards the winning-post. When the leading horse crosses the line, the bets are tallied up and then added to or deducted from the various bookies before moving onto the next race on the card. When all 10 races have been run, the final handicaps are displayed, together with the winning games, and you are given the option of spinning (hopefully while you're ahead) or progressing to the next day's record. Competitive gamblers will obviously choose the latter option - that's one bet every minute!

The program is written in both Basic and machine-code but this shouldn't deter anyone from purchasing it as the whole package is professionally put together and plays just like a 100% machine-code game. Test procedures but the action, when it does occur, is fast and smooth. Check out the very animation of the horses, it's as realistic as you could possibly hope for.

A DAY AT THE RACES is a pretty's dream. You can afford to 'lose' as much as you like without fear of emptying your wallet or losing your shirt. More than that, it should appeal to a wide range of Atari owners. First class entertainment for the whole family.

GHOSTBUSTERS

Activision
44K Cassette (29.99)
1 Player
1 joystick/Keyboard

It's arrived at last - the official cassette version of GHOSTBUSTERS, Activision's top-selling computer game based on the popular film of the same name.

Activision are plugging this cassette version as an enhancement of the original box, in actual fact, it's identical to the disk version which has been around for quite a while now. They claim a superior musical soundtrack, improved graphics and faster, smoother action for Atari GHOSTBUSTERS compared with other computer versions of the game, but then we don't need Activision to tell us that. We already know anyway!

A lengthy review of this game appeared in issue 14, so I won't repeat myself here. All the 'disk' features are incorporated in the cassette version, right down to the voice synthesis and the resulting laugh which bursts out hysterically when the cassette is first inserted.

An easy game to get to grips with - despite all the complicated equipment - and, even though it may not tax the capabilities of all these mega-averse freaks out there, it's quite difficult enough for the vast of us mere mortals (and the high-performance Nintendo if you want a real challenge).

An undoubted classic and one which that Activision straight up into the big shot league, but this cassette version really should have been released along with the disk original. Let's hope they haven't left it too late!

COMING UP



JOHN SWEENEY IS BACK ON THE ADVENTURE TRAIL

THE PRICE OF
MAGIK
Level 2
44K Cassette
£9.95



THE PRICE OF MAGIK
Level 2

The Price of Magic is Level 2's sequel to the best-selling Red Moon. I am pleased to say that it is a very worthy successor to that excellent game. You are alone in a hostile world full of monsters and magic loss, worse than Red Moon, you start the game with no knowledge of magic and have to learn what the spells are, what 'Focus' objects are required to use them, and even what they do!

Your objective is simple, defeat the evil sorcerer, Magik. To do this you will have to travel through scores of strange locations, defeating numerous dangerous demons, and gaining vast magical powers. As with Red Moon, the game is rather large, over 200 locations, over 2 dozen sub-locations, over 40 enemies, and 18 spells. The implementation is very similar to Red Moon, text scrolls up from the bottom of the screen, optional pictures (simple line drawings, but quite colourful) are drawn at the top of the screen, and your characters are read into a large buffer and actioned quite speedily. AND it does it all simultaneously. You don't have to wait for the previous command to complete, if you know where you are going you can fly ahead as fast as you like! The only thing to watch out for is that, if you are the violent type and have killed lots of monsters by force, their ghosts will return to plague you - probably while you are typing ahead!

The scoring system on The Price of Magic is a novel one. You start the game 100% sane and 10 years old. Every time you achieve something useful - reaching somewhere inaccessible, finding a spell focus, discovering or casting a new spell, etc., your sanity goes down by 1 or 2 percent and your age goes up by 1 or 2 years. Madness and Magic go hand in hand, but

somewhere you have to avoid dying of old age when you reach 100, while trying to achieve 0% sanity! Obviously you can see yourself the challenge of finding how to lose all 100 sanity points, but in fact you don't need to find every single point in order to defeat Magik and win the game. Once you learn most of the secrets, it is possible to play through and defeat Magik while still 70% sane!

One of the nice things about the game is the wide variety of solutions to some of the problems - I compared my solution with someone else's and discovered that we had solved about a dozen problems by different means. As you improve in your knowledge of magic you will find more and more ways of achieving certain objectives. For example, there are at least four different ways of getting the Claymore from the Sorcerer (in the other hand there are some quite difficult problems which only appear to have a single solution).

Initially your magic will be fairly weak, and you will probably find it necessary to fight some of the monsters. The combat system is very Dungeons and Dragons-like - weapons, armour, the Focus, and random dice throws by the computer. As you learn how to defeat or bypass the various monsters, either by magic or by logic, you will almost certainly want to avoid physical combat - the ghosts of the defeated can be very annoying, and once you know all the secrets you can avoid ALL physical combat. One of the best 'monsters' is the army of ants. You can only kill one at a time, and there are 128 of them! Your chance of surviving 128 rounds against them is not worth mentioning - even the

most blood-thirsty adventures will be forced to turn to logic or magic in the end.

The game's understanding of English is excellent (within reason) and Level 9 are now being slightly more lenient in their claims - "The program cops with a wider range of English sentences than any other console-based game I've seen" - with which I have no argument. There are a couple of bugs which you should be aware of. The hit in the ceiling should say "The hit is still stuck in the ceiling", '5581000' should say "Stom". Another concern GET. I always use GET. I know it is not very good English, but it has one major advantage over TAKE, it is shorter! If you always use GET, you are likely to get extremely frustrated when, when you finally work out how to get the **WHOLE** from the mist and have the means to achieve it, you will find that GET **WHEEL** fails. At this one point in the game you must use the word TAKE - a very strange bug! One other minor point is this, the first time I succeeded in defeating Mopler I was most surprised to find that the game did not end! Some clue as to what is going on here might have been helpful as I wandered aimlessly for some time trying to work out what to do next. I had killed him by physical force, but, presumably because his ghost still exists, this is not adequate. You **MUST** deliver him by magical means for the game to finish.

This game is Level 9's first use of the **LENSLOCK**. Just in case you haven't encountered one, a **LENSLOCK** is a small device containing prisms, used to deflect various patterns on the screen. Without this you will not be able to complete the adventure.

All too late you pounds this adventure is excellent value for money. Congratulations on another great game, Level 9. (P.S. Loved the Blue Box)



BALLYHOO

Infolcom
Diskette
£14.99



"When did you last have a good argument with your computer? No, it's not quite as bad as Hitchhiker - this one admits when it's been lying to you! This one, not only can you argue with the computer, you can even argue with some of the characters in the game! Try approaching the **BORGESS** (carefully!), or giving some advice, or asking the gannet about the kidnapped girl - I haven't had so much fun in ages.

Insolent! **Supplod!** **Subbed!** **Magnificent!** **Intelligence!** **Mind-boggling!** **Hilarious!** **Challenging!** **Magical!** **Prostrating!** (Need I say more? Why haven't you bought a copy yet? What? No disk drive? Go and buy one immediately!)

Within minutes of entering the game, as I balanced precariously on a tightrope, I was already shouting to myself as the text scrolling up the screen. It is so much fun to play an Infolcom game. You type things in and it responds. The amount of text inside the game is amazing, and the variety of the minds of the Infolcom storywriters, who have thought of clever, amusing, and misleading responses to some of the most ridiculous and irrelevant things that you could possibly type in, is quite incredible. (You may have guessed by now, probably just by examining the superlatives, that I think this is a rather good game!)

The game is classed by Infolcom as being at their Standard Level, which does **NOT** mean it is easy! It is by a narrow-come to their fold, by the name of Jeff O'Neill, who seems to have a devious a mind as the rest of them. Using their superb game systems and support teams he has produced an excellent adventure. Lots of interesting things to try, lots of puzzles and lots of very logical solutions - at least they are when you look back on them and wonder how on earth you couldn't have worked out what was going on sooner!

The game is set in a circus. The show is over. You are hanging around the lot when you overhear the circus owner talking a detective that his daughter has been kidnapped. You start investigating. Much later, when you find the detective unconscious (dead drunk, to be slightly more accurate) and you realise that you are completely on your own in a hostile world, surrounded by extremely performers and savage animals. But like all good Infolcom games, clues are to be found all around you - if only you can recognise them! You will of course succeed in rescuing the young girl, providing

that you can master several circus skills, but even then your troubles will not be over. Things go disastrously wrong in the last minute and you will find yourself forced to attempt one last death-defying feat. And just when you **REALLY** think it is all over... But I mean't spoil your fun!

The packaging is an usual superb - you get your very own circus program, poster, balloon (you have to provide the helium, unfortunately), and made card advertising Dr. Nostrum's Protoproduct Genuine Preparation of Naturally Mirrored Compound Herbalised Extract (gets rid of Pile Weasels by paralyzing them, gets rid of detectives by making them dead drunk, and also useful for clearing the area on contact! - if you manage to get hold of a bottle, then whatever you do, don't drink it!).

The only slightly disappointing thing about Ballyhoo, apart from the fact that it doesn't understand the word JOIN - I suppose the Americans don't see it in the same way as we do! - is the way that the game moves forward. The laws of cause and effect appear to have been slightly bent! For instance, when I first found the detective lying dead drunk on the ground, I had searched a bit (by **RE-STORING**) to discover how he got there. I obviously deduced that it was my success at ballooning the gulls (worth 20 points) which had caused him to appear there. But when I played through the game from the start, doing various things in a different sequence, he didn't appear there! The previous three Infolcom Mystery Adventures all have clues taking away in the corner of the screen - one minute for every three you make - and the points of the story are dictated by the passage of time. In Ballyhoo there is no clock to race against, you can spend as much time as you wish solving some problems. It is only when you gain certain points that time is allowed to hurry passed. And some events, like finding a detective detective, are dependent upon your gaining multiple sets of points, regardless of sequence. Quite effective once you get used to it, and certainly a lot more than racing against the clock all the time!

Expert or beginner, you are guaranteed to get a lot out of Ballyhoo. Infolcom have proved you again that a thousand words is worth far, far more than a picture.

P.S. Watch out for the shaggy lion - he's mean!

First Steps

by Mark Hutchinson

I remember when I first bought my ATARI several years ago, PAGE 5 had not started and I had to subscribe to an American magazine. This was a new publication and was full of hints and tips. Unfortunately, as is the way of the world, most of the authors moved on to different and usually more involved subjects and beginners did not get so much help. If you, as a beginner, were to start reading this magazine at (say) issue 24 you would think it was for experienced users only. Is this your think that of this magazine, the Editor has asked for a column of useful tips for those just starting with their ATARI's so here are a few to be going on with.

The quiet cassette When I was using a tape recorder I detested listening to the beeps of transferred data so I would press CONTROL-1 (that is pressing the CONTROL key and the 1 key at the same time) and switch off the TV sound. When the data was loaded the computer would recognise its master's wishes and check if I had pressed a key and act on it. Thus, when I heard CONTROL-1, it would sound the beeper (400/800 only).

The BASIC system Alex Dewdney advises that he types in CLOAD then types RUN three times before this. Then, moving the cursor to CLOAD, he presses RETURN three times. The first RETURN asks the computer to CLOAD a tape, the second means the tape is ready and the third is stored in the last key pressed memory location. When the tape is loaded the computer prints READY and looks at this memory location. Finding a RETURN and with the cursor on RUN, it will obey the command and, key pressed, you have 'started' a CLOAD tape.

Music while you work If you use a tape recorder you may know that it works on two channels, one for data and one for audio. This is used in the language tutorial tapes. If you insert a music cassette and POKE 54018, the cassette reader will start and you will hear the music through the TV speaker. POKE 54018,00 will turn it off.

At this point I had better explain a little about POKE and PEEK. Consider your computer as a massive amount of pigeon holes. Each hole will contain a number between 0 and 255. Each number tells the computer to do something. As you load a program into the computer, these holes are filled one by one. Easy so far?

To find out what a specific memory location has stored, you ask the computer to look (PEEK) into that location and print the result. PRINT PEEK (54018) for instance. To make the computer do something else you must change the number in that location by inserting (POKE) another number as we did above. Often many numbers will do the same job. To get the best out of this method I would suggest having a good memory map which lists the location, what they do and how to use them.

Changing colours You may remember, several years ago, the black and white TV news games. After much use, an image was burnt into the screen phosphor and this could not

be erased. To overcome this problem ATARI built a colour cycle into the operating system. After several minutes the colours and intensities would change. This happens about every four seconds and will continue until a key is pressed. As far as I know, ATARI are the only computers to have this innovation. Not so good if you only use joystick input only, however, you can stop this cycle with POKE 714,0. This will only last several minutes so you will have to make sure that it appears during the repetitive part of the program that causes the lockup.

Quiet keys The 400/800 models relied on a miniature speaker for audio keyboard response but the new models send the tone to the TV speaker. Apart from turning off the sound (see a good programming technique), you could POKE 731,1 (POKE 731,0 to turn it on). Obviously this is XL/XE only.

Power/Slower keys The ST has a control panel that lets you select keyboard response time (the delay before a key starts to repeat when held down), and the keyboard repeat time (how fast it will repeat when held down). All very good for ST users but did you know that the XL/XE can do it too? POKE 729,X for response time and POKE 710,X for repeat time, where X is the delay.

Stop that listing! This hint is well known by everyone except beginners. When you ask the computer to LIST a program, it will list every line. If the program has dozens of lines it will push them over the top of the screen. You could hit BREAK but then you would have to LIST again. CONTROL-1 will temporarily stop the listing and pressing CONTROL-1 again will list the listing continues. I wonder how Justice in Germany is getting on with this?

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Reverses a program Most disk programs that you buy will reflect what you press SYSTEM RESET. You can make your own programs reflect by POKE 580,1 but the disk will need some sort of AUTOMATIC SYSTEMS file for this to happen.

Many of these tips come from Alex Dewdney and his Pageflow for which much thanks. It also has two mysterious listings from 'Mindy' Marham that I will report on next issue. In the meantime if you have any tips or hints - not necessarily POKE statements - please send them to me so that I can use them in the next issue. Better hurry, it comes out sooner than you think, I know, I have to write for it!

A last tip from Mr. Pageflow. If you need a 1005 ribbon go to Bunnys store and ask for a (jockstrap) Commodore MFS 601, about £1.

During October I will be in the SouthEast area (by coincidence!) on a course lasting three weeks so if you have been waiting on a reply from me, this is the reason it may be late. However, please do not let that stop you writing to me. I really enjoy the mail I receive.

In Part 1 of this article we looked at the Datavari communications package, including the Alivada Technology IF52000 modem, Datavari interface, and Multi-Viewers communications software. Part 2 describes what happened when we first tried to use it 'for real'. Remember, we were complete beginners at the telecommunication game, and hadn't a clue what to expect. Except for one thing - a hefty phone bill. But *The Lady of Infinite Wisdom* had provided us with a jar so we could pay for our calls as we made them.

First Contact

My son produced a list of bulletin boards from a computer magazine, giving us a good starting point. The Atari based Basidon ITBC board (0208-25122) got the honour of being our very first contact, so we configured Multi-Viewers to its requirements and dialled the number. The phone rang, then a high pitched whistle was heard. Great - a modem at the other end! Quick, this is costing money - switch software into terminal mode, switch modem online, and...and...and...nothing! The screen stayed blank. We re-checked software and modem settings, and three worried days. A few tentative keystrokes made no difference, either. It obviously wasn't going to work, so we gave up. Grrr so far! 40p (cheap rate). Not a good start.

Undaunted, we chose another board from the list. This was SAMES (0608-884804), an Atari based board in Scotland. We dialled and waited. Yes, there was the modem tone and... YES! Something on the screen - we were talking to another computer! When the shock of this success had subsided, we gingerly followed the login procedure shown, then selected a few commands from the seemingly meaningless list presented, without really knowing what we were doing. We eventually found a help facility, and got it listed to the screen (and in the buffer), so decided to log off and print this out to study, so we'd have more idea of what to do. BUT - how the diabol do you log off?

At this point there was a great temptation to simply switch off the modem and hang up the phone, but this, apparently, is one of the greatest sins you can commit in the eyes of a board's System Operator (Sysop), so it can sometimes cause the software to 'hang', making the board unusable by later callers. Perhaps that's what had happened to the Basidon ITBC board. We realised this, and eventually discovered the correct command, and logged off. Phew!

The next job was to get the printer. Oh NO! We forgot to turn on the buffer to capture the screen messages. What a waste of time - and another £1.20 on

Telecommunications it still a mystery area to many owners. Is it worth it? What equipment do you need? In this two part article John Davison reviews the most popular package and gives a first hand account of his experiences.

GOING ONLINE

Part 2

by John S. Davison

the phone bill. At that point we decided to call it a day, having spent £1.80 on phone charges and having got nowhere. I occasionally dragged coins to the value of £1.68 into the jar *The Lady* had thoughtfully provided for the purpose, and made enthusiastic notes to her about how we'd got on.

The Breakthrough

The following night we made a startling discovery. Buried in the middle of the magazine list of bulletin boards was a system called Gamblingay CBBS (0760-30511), based about 4 miles from where we live! Local phone charges! So we set up again, and dialled in. I remembered to turn the buffer on this time, and...there was the board, clear and bright! I claimed to belong to the Chatham CPM User Group, and invited us to register if we weren't already users. This involved giving name, phone calling fees, and password for use on future calls to the board.

A help function called up an explanation of commands and facilities. We selected the message facility, and discovered a lower level help facility which explained how to use the various message options. We chose a summary list of all the current messages on the board. The list was long and items were soon lost by scrolling off the top of the screen, but no matter - this time everything was going into the buffer on the I/OSE and could be called back to the screen at any time, or dumped to cassette, disk, or printer for reading later.

Found - Other Atari Users

Most of the message subjects seemed foreign to

Continued overleaf

Acari users, with frequent references to Windows, Dbase II, CP/M, RKOS, and other CP/M topics. But suddenly, a reference to Atari, then another. This was more like it. We then went into the Read Message function to get the full text. The first one was a general invitation to all Atari users to contact the message originator. The second one was a cry for help in locating an Atari cassette recorder.

Plucking up courage, we chose the Read Message function, and replied to the first message, explaining that we only had the modem on loan, and he wouldn't hear from us again if he didn't reply pretty quickly.

There was little else of interest to Atari users so we decided to log off. We were invited to leave a message for the Sysop if we wished, so we left a few complimentary words about his board, and logged off. This time, we'd been online for 35 minutes for a cost of about 3p - very reasonable.

Next Step - Micronet

The Datatari package is also suitable for accessing Viewtext services, the most well known of which is probably PRESTEL, with its successful offshoot Micronet. The bad news is that to use this service you have to pay a subscription, currently £16.50 per quarter, and this is on top of your phone charges. For this you get access to both Micronet and the more general PRESTEL services. The good news is that in most of the U.K. you can log on through a local access number, which means you only pay local call rates, currently about 4.5p per hour.

To get into PRESTEL/Micronet you need a User Identification Number and a Password, which you're only given after you've signed up for the service and handed over your money. However, you can try out the service for free before joining. Just call Micronet on 01-278-3143 (voice line) and they'll give you details of the special demonstration section and how to log onto it.

The Datatari package handled Viewtext in the same fast-free way it handled 'normal' bulletin boards. The only disappointment was that, although the software reproduces the PRESTEL graphics, they're only in monochrome. You don't get the glory of full colour. You can set the background to the colour of your choice, but that's about it!

We spent a pleasant 30 minutes wandering around the demonstration section, looking curiously at the special facilities for Commodore, Sinclair, Amstrad and Acorn owners, and wondering if Micronet would ever wake up and begin supporting The Best Home Minc in the World. I guess you know the answer to that as well as I do.

It's not all bad, though. PRESTEL itself is 'non-secularist', and there's a lot of free information available in there - over 300,000 pages, they claim. It's potentially useful to anyone, no matter what computer they use. I guess it's rather like a scooped up teletext service, with the advantage that you can interact with it.

In addition to the 'free' public information, bulletin board sections, etc., there's also more special-

ised stuff, which you pay for separately, either by subscription or by paying for each successful data you look at. Micronet itself is an example of this, as your £16.50 subscription consists of a basic PRESTEL subscription, plus an extra charge for the Micronet service.

Various companies are now beginning to offer their services through PRESTEL, such as theatre ticket bookings, travel bookings, and home banking services, among others. And, of course, there's electronic mail and tele facilities. Unfortunately, as we were only logged onto the demonstration section we couldn't try these things out 'for real'.

Downloading Software

One thing we hadn't tried so far was downloading software. This is often touted as one of the big attractions of owning a modem. Besides ITDG claim to hold downloadable Atari programs, so we decided to give them another try. This time we got through straight away. After the usual logging on formalities, there was a series of messages announcing the download software specifically for Datatari users (that's us!).

We eventually got to the download area, and found that the only programs were terminal programs to enable you to communicate with the board and transfer download files to disk. As we were already using Multi-Viewtext this seemed a bit pointless, but maybe we were missing something.

Purely in an experiment we tried to download a Datatari R532E handler. A simple command plus filename got this started, resulting in what looked like random garbage being written to the screen. After what seemed like an age (or long distance phone rates) it stopped, so we now assumed we had the program in the buffer. But what do we do with it now? It was obviously a machine code program and it was in the buffer with all the other messages we'd had on the screen, so we couldn't simply save it and run it. I guess we should have cleared the buffer, selected download, and saved the buffer on just before the download started. There was nothing in the Multi-Viewtext manual about this.

Happiness at Last

We contacted various other boards over the next couple of weeks, and only came across one that really impressed us. This was the Central Birmingham Atari Bulletin Board System (CRABBS, on 021-430-3761). This one radiated an air of friendliness right from the start. It was easy to use, and had lots of interesting sections on it, even downloadable software - some of it being programs from past issues of PAGE 8. And, it was dedicated to Atari, so there should be little or no Beek, Commodore, or Sinclair junk cluttering up valuable disk space.

A message explained that Multi-Viewtext has been updated, now having an XMODEM Transfer function, for use in downloading software. You can get this upgrade by returning your original disk to the

Contact

STARTUP UK USER GROUP: We wish to contact other user groups especially in U.S.A. We would like to contact you first and groups who share our Atari matters from around the world. 300 letters received. Write to John, 24, Rowley Gardens, Fifehead, Houghton Regis, Dunstable, Beds. LU5 5EL, England.

ATARI USERS GROUP: Do you live in Mississippi? Then learn new programming skills, use new software, meet other Atari users, share problems and get the best out of your Atari. Why not join the Mississippi Atari Users Group? We meet at the People's Center, Madison, Tallahassee on the last Sunday of the month from 7 p.m. For further information contact Mark on Tallad 598794.

HELP WANTED: I desperately need you! I have an SX21L and recorder and I would like to get it working with Atariware worldwide. We could exchange ideas, hints and tips etc. Please write to me: Tyrone McKenna, 98, Marley Street, Court Street, Killybeggs, Duffin 14, Ross. I please to reply to all replies. If possible please send me a few quick tips.

PEN PALS WANTED: I would like to contact any other Atari users anywhere in the world. I have an 800XL, a 8080 recorder and a 1050 disk drive. Also PAGE 2 screensaver wanted. Will try and answer every letter received. Tony Brady, 246, Castle Road, Epsom, Surrey, Co. Surrey, England.

DISABLED USERS AND BARGAINS: Finally I would like to contact other disabled Atari users. Naturally, I have been given credit with the old BBC shop software in £44900000 but cannot use the without the Atari sounder line program. Can anyone tell me if this exists and where I can obtain a copy? I have written to Blockson Support Services but they have not bothered to reply. Jim Colby, 44, Water Street, Great Harwood, Lancs. BB6 7QB, Tel. 0284 897111.

LIGHT PEN FOR SALE: Atari compatible with instructions and sample programs. Only £25. Simon Rowlands, 4, Conventry Road, Farnborough, Hants GU14 4DD.

486 MICROSOFT FOR Atari 400: No2 working - for spare parts. £9. Tel. E. Rowden on 0850 497.

FANTASY BIRD PLAYING: I have been playing for about 8 years and would love to exchange ideas, hints, tips etc. about anything concerning bird playing games. The methods written are 8452C programs for the bookkeeping side of role playing on the Atari I have an 800L, 1050E, 1050 and 440. Even if you do call please tell the Chris give me a ring on 0429 311511 ext. 208 or on 0429 289127 in the evenings and ask for Paul Carter (aka Comm.cheesehead).

140 INTERFACE: For sale, as supplied new with manual, cable and power supply. £30. Please Mike Davis 0429 307662.

JUTLAND SIMULATION: Would anyone be interested in co-operating to produce a simulation of the battle of Jutland? I can provide all historical and technical details but lack advanced programming knowledge. Any other suggestions ideas welcome. Please call Ian Hayward on Brighton 0075 414880.

FOR SALE: 8017 printer £30. 1024 printer £70. 1050 recorder £24. 8452C XL £25. 1005 XL £15. Generational Friends and Horsem. Think! Think! £5 each. Century 8000 Computer on 0660 31122 from 9:00 a.m. to 4:30 p.m. Wednesday to Friday.

ST PHONE NUMBER: The circular bulletin board with the added spreadsheet - PLUS! Log on and let us know you are there. Coming soon, a section for ST owners on pages 707B and 708LAP V31. 1280 75 hrs, 24 hours a day. 01 999 8994.

WANTED: Latest Front controller with instructions and an original Atari joystick (copy's OK). New or nearly new. Linda Tinkler, 46, Torrington Drive, Thirskwell, Wrex. Merseyside L81 7JZ.

PEN PALS WANTED: I would like to make contact with Atari users around the world especially in America. I have an 800XL and 1050 disk drive. Please write to Fred Willemsen, Dordrecht, Wassenaarseweg 21 I, 3069 SE Amsterdam, Netherlands.

486 EXPANSION BOARD FOR SALE: For 486. Fitting instructions included as well as if required. £60. Contact Mr. A. James, 85, Chesham Road, Macclesfield, Lancs.

LICENTIENSHOOR USERS: I have an 800XL and 1050 disk drive and would like to hear from anyone in the Licentienhoor area. Contact Jim Tovey, 21, Habbell Close, Newport News, Virginia, 23616USA.

ATTENTION PROGRAMMERS: Atari Users Group in Dublin needs more programmers. Our first priority is already started but team work counts things up. It's a money making, want to be in it? Contact Niall on Dublin 70807 between 8 p.m. and 10 p.m. or Gus on Dublin 429119 between 10 a.m. and 10 p.m.

ADD-ONS FOR SALE: Operation 8.0.1 needed for the 400/800 g.m. Maple Workmaster speech synthesizer £79. Smart Speech Recognition system £21. Atari speech £25. Rocklows Customised Interface £28. R.W. Harris, 36, Spectator Close, Falmouth, Cornwall, South, TR11 1TR. Tel. 0960 86836.

MEGABYTE FOR SALE: Microw Technology W20000 modem complete with Datasat interface, Multi-Viewworks software and manuals. £79 inc. Please 091 5642 after 7 p.m.

MODERN FOR SALE: W32000 modem on brain Viewworks and Datasat interface plus additional software, maps, manuals etc. All new need for £100. Call Bryan on 0298 78623.

INDEX ON DISK DRIVE SYNCHRONISED: Does anyone have volume or issue 1 on get the synchronised modular disk? Also the following magazines would assist: ASTIC Vol. 1 (No. 4, Vol. 6 No. 4, 5, 6, 7 and 8), AMM1000 37 and 40. Will try to exchange. Please Mike Knight 0416 371117 evenings or 0272 795519 daytime.

ASTIC MAGAZINES: Volume 2 Issues 1, 4, 5 and 7 and Volume 1 Issue 2. Only. Also January '90 version. Unlimited number and postage for the 800. 24 hrs 020. Please Kimball Chelmsford 26816.

ST AND KEYS PALS WANTED: I have an ST with colour and music modules and printer and an SX21L with disk drive and am looking for anyone anywhere to become my friend and swap items and tips. Please write, all letters will be answered. Martin Bradwell, 971, Candy Road, Grimsby, S. Westwoodside, 491011LY.

SOUTH WALES ATARI GROUP: The above group help to inaugurate meetings on Thursday 18th September at 8.30 p.m. at Cardiff U.T.R.C. Please Hennie, Hans David Wharf, Cardiff. All Atari users are most welcome.

KIT FOR SALE: All board and with disk covers. 800XL, 1050 disk drive, 1000 recorder, joystick plus software and books. Also PAGE 2 from issue 2. £400 inc. inc. Please Tony Tuning on Thursday 5071, evenings.

NEW DATA DISCOVERER: For sale, instruction £20. Computer's Second Book of Atari. £7. Roger J. Bray, 4, Salisbury Road, St. James, Bristol BS4 4EL. Tel. 0117096.

BESTER FOR SALE: Includes 07 disk drive, Atari 800 computer, 486 cards and software for sale. All in excellent condition with original packaging and manuals. For details please 0429 28200 and ask for Parva.

BOOK EXCHANGES: I am willing to swap my copy of Dr. M. Atari for a copy of Revised Mapping The Atari. Please write Mike, Mark Road, 50, St. Nicholas Street, St. Andrews, Fife, Scotland, KY16 6RH.

BOOKS FOR SALE: The AMAZING Computer £18. 80000 Computer's First Book of Atari Operation £2. 80000 Atari PEN PAL wanted in 05250X. Please Rowland 0620 on arrival to Philip Carver, 311, Stratford-on-Avon, Rowland, CV34 9JH.

EARTHQUAKE 1986: Please help. How do you get past the crash on the 80-plate? What do I need to make work? Paul Coley, 64, Portsea Street, Whiteley, London, SE17 3JF.

ADVENTUREWRITERS: Many people need help in writing an adventure but I need help in writing one! Can anyone offer assistance with the program Adventureworld? Steve Morris, 89, Sydney Avenue, Leigh, Lancs. WN7 5L7.

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