

TYNE & WEAR



AT&R

USER GROUP

Issue 33

TWAUG NEWSLETTER

Publishing

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Max's Comments

We are still looking for a person who can REVIEW Games for us to include into the newsletter. The reward is, unfortunately not cash, but the person can choose from the PD library. I am pleased to say that we had at last some articles donated from two subscribers, some pieces are included in this issue and another two articles will be in the next issue.

Besides this help we are still looking for writers, at the moment it all boils down to me and it is hard work and a little help would certainly ease my workload. So please think about it and give poor old Max a hand.

AMS 98

Please do not forget the Stafford SHOW at Bingley Hall on November the 14th.

I have been told that this convention will be well represented by businesses selling Atari products.

The Portfolio Club UK have also confirmed they will have a stand and of course TWAUG will take their usual place and John has informed me that we will have a CDROM disk on SALE, check the back page for more details.

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PUBLISHING!

This newsletter is set up with the Desktop Publishing program "TIMEWORKS 2", with a Mega 1 ST and 4 meg of memory. Files received are first converted into ASCII format and then transferred to the ST usually with TARI-TALK. The files are then imported into the DTP and printed with the CANON BJ-30 Bubble Jet Printer at 360 dpi.

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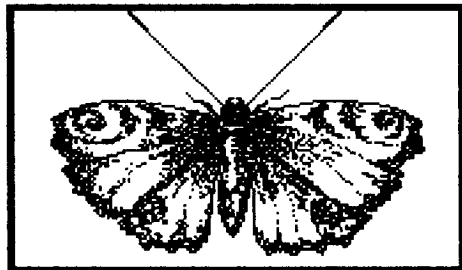
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In issue 29, I wrote a little article about Timeworks 2 the Desktop Publishing program I use to produce the issues of the TWAUG newsletters. In issue 30 I wrote about Calamus Desktop Publishing and now at long last have sufficiently mastered PageStream 2.2 and I'm now able to write a small article to compare this DTP program with the previous two.

I don't know why I collect so many DTP programs wouldn't you think that one or maybe two would be enough to set up a newsletter? I collect programs to find the best one for use. I purchased this PageStream 2.2 quite a while ago now but only just found the time to see what it can do and also compare it with all the others I've got. Besides a very good manual there is also a very well written QuickStart Guide that comes with it.

I wanted to write an article on PageStream, but I do not like to write about objects I'm not familiar with, that's the reason I really got stuck in and learned how to use PageStream. It took me nearly a week to get to know all the commands and be able to use this DTP to its full capacity. It's not really a very difficult program to

work with, it has some nice features which Timeworks hasn't got and yet I still prefer to use Timeworks. Timeworks is without doubt the easiest DTP program to use, I learned its workings much quicker than any other DTP program including PageStream. As I said above it took me nearly a week to get to know all the commands and yet I still cannot do without the manual.

This article has been set up and printed with PageStream, it has taken me a bit longer with this program but at least you can see it does the job.

I will include some screen shots of some of the screens into the article to give you a visual idea what the screens look. I included some screen dumps into the Timeworks and Calamus articles so I may as well do it in this article too.

Timeworks, Calamus, Easy Text Pro and Easy Text Vector are all Frame based program, that means you must first draw frames for text or images before you can enter anything. PageStream is different no frame needs to be drawn.

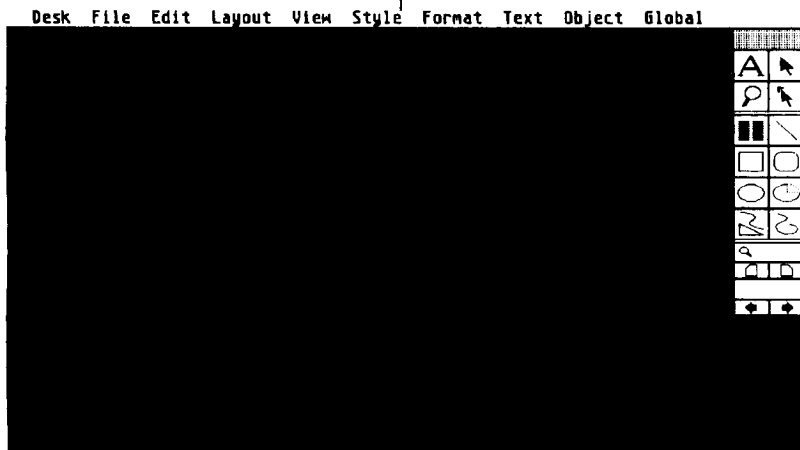
When the program has loaded and the toolbox appears you can open the document window. The screen looks

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similar to the screen shot below. To start a new document move the mouse pointer to the File menu on the menu bar and click the New Document command. This will open a dialog box where you can select the page size, i.e. A4, A5 size, single or double sided pages, this is of course an important guide for you as well as for the program. The default is a single sided 8.5 x 11 inch page size, if you click on OK with the left mouse button the

placement of the columns. This option is also available in the other DTP programs mentioned above. The outlines of the columns are now visible by dotted lines, if there are no columns, choose the Show Columns Outlines option from the View menu to make them visible.

There are many other options you can select to make it easier working on the page. The rulers can be made visible



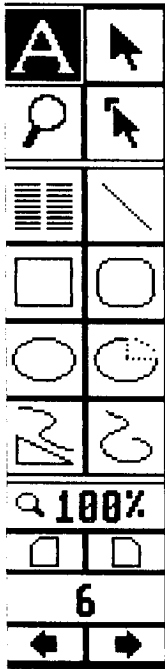
document window will open. All other DTP program, after you've opened a new document the screen will display a 6 column window, PageStream shows a blank window, as above. The easiest way to lay out columns is with the Create Columns command in the Layout menu from the menu bar. A dialog box will open to select the size, number and

at the top and left of the document window, toggled from the View menu, it makes it easier to place any lines or boxes more accurately.

If you want to enter some text into the columns visible on the screen, with PageStream you can type it in or import an ASCII file from any word processor. Just select the Text tool

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from the toolbox, click on the capital A at the top of the oblong box on the right of the screen. The cursor will change to an I-beam cursor move it into the column, click the left mouse button and the text cursor will appear where you click the mouse button. You can now start typing or importing text from the text cursor.



There is no need to draw a frame in PageStream, to enter text in the other DTP programs mentioned above a frame has to be drawn first before you can enter any text or graphics. This is one of the differences in this program.

Another nice option I like in PageStream is the way a header can be entered into the document. If the cursor still resembles the I-beam, you can click outside the column and type the header, then select the Pointer tool from the toolbox, that is the pointer to the right of the capital A, the cursor will change back to an arrow. The text object you've just created, the header, will now be surrounded by a dotted line with size handles at its corners

and mid-points. If you now point the arrow at one of the handles click and hold the left button you can drag the mouse and the outline text object will follow the pointer and resize the element.

There is one option though in PageStream I miss and that is placing a footer at the bottom of the page. As you will notice, of course you will have how silly of me, I always place the month and year in the centre at the bottom of each page with the page number. With PageStream you must place the cursor where ever you want it, even for page numbering and type it out. Once the page number has been place it will number each following page automatically, but not the month and year. In Timeworks you select the Header/Footer option, type it into the dialog box, left, right and centre options provided and the program places the header/footer at your selected margin.

PageStream has a Rotate command which is missing in Timeworks, I would have like to see the rotation option in that program. You can rotate, slant and twist text or graphics objects in PageStream.

One good option though when running PageStream is you do not need the Graphics Device Operating System (GDOS), Timeworks, will not run

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without GDOS.

In the first column on the previous page I included the screen shot of the Toolbox, which is on the right side of the screen. The box contains a selection of icons, or tools, which you use to draw or edit your document. Like any other DTP you select a tool with the left mouse button.

Lets start with the Text Tool, the capital A, this tool is used to enter and edit text. When you click the left mouse button on this icon the cursor will change to an I-beam cursor which is used to highlight text, creating text objects and placing the text cursor in text columns and text objects. Text may be imported or entered from the keyboard into columns and text objects with the Text Tool selected.

The Pointer Tool, to the right of the Text Tool, is used to select page elements. When selected size handles will appear around the selected elements, small square boxes, these may be moved, resized, filled, reshaped, rotated with the Pointer Tool..

The icon below the A the Magnifying Tool is used to zoom in on the elements. When the tool is highlighted the cursor changes to the shape of the icon, place it anywhere and click the left mouse button and the element will

zoom in.

To the right of the magnifying glass is the Reshape Tool. This tool is used to change the shape of polygons, polylines and bezier curves, elements other than those mentioned above can also be manipulated as if the Pointer Tool were selected.

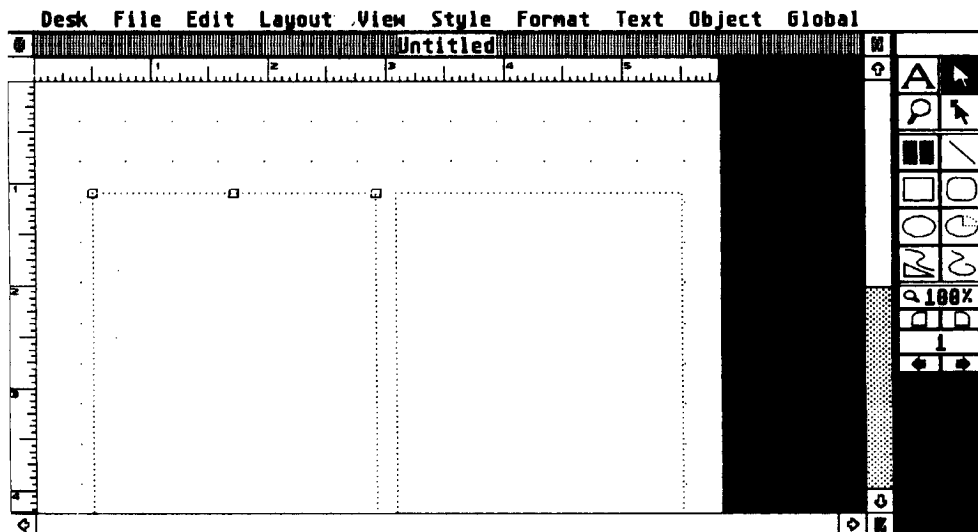
The third icon down is the Column Tool, it is used to draw text columns for holding text. The cursor will change to a crosshair for accurate drawing.

The next seven tools are the Drawinf Tools. The diagonal line is the Line Tool, it is used to draw lines such as the centre and bottom lines on this page. The rest of the Drawing Tools are used to draw squares, round cornered rectangles, circles, ellipses, circular arcs, elliptical arcs, polygons, polylines, Bezier curves and freehand objects.

The Page Change Tools, below the Zoom Tool, are used to change and view master pages. The arrow icons are used to move forward and backward one page at a time. If either arrow icon is selected while Shift is pressed, PageStream will move to the first or last page containing an element.

The page number indicator displays the current page number.

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The screen shot above displays a document window with a double column selected page and the Rulers visible. When I selected the New Document from the File menu I chose the A5 page size and Double Sided Document. I then moved the cursor to the Layout option, on the menu bar and selected Create Columns and chose two columns as in the newsletter.

If the ruler and columns are not visible after you've selected them you can make them visible by selecting the Show Rulers and Show Column Outline from the View menu.

The screen shown in the screen dump is the actual size. This is the size I always use to enter text or graphics.

The page in actual size is shown at 100%, the text is displayed in true WYSIWYG, (What You See Is What You Get!)

The only problem, when the page is shown in actual size, it doesn't display the full page, to see the full page select the Show Full Page from the View menu. While the text on the page will not be readable it will demonstrate the overall layout.

THE END

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The Atari 8-bit Hardware Upgrade, Modification and Add-On FAQ

● Version 0.1

Dated February 18, 1995

Maintained by: David A. Paterson
Mailto:d.paterson2@genie.geis.com

INTRODUCTION

This is a very basic version. I intend to add as people give feedback to what they want to see, and how they want to see it. Any info you have is more than welcome!

PURPOSE

This FAQ exists to describe the various hardware modifications available to the Atari 8-bit user. It does not teach you how to do them. It definitely doesn't take any responsibility for the results if you do try them. But it will try to give you some information about where to find more information, which upgrades (or "hacks") are best, and who to consult if things go wrong. For addresses and phone numbers of any of the companies listed, consult the Vendors and Developers List, posted at or about the 15th of each month.

It also exists to describe the many

wild and wonderful products that have been produced for the Atari 8-bit. Many are unique, some may be apocryphal. Mainstream items like printers, modems, disk drives and cassette decks are all excluded. Temperature gauges, combination printer buffer/ramdisks that run through the joystick port, and other such are fair game.

POSTING FREQUENCY

This FAQ is posted whenever I remember to post it. It is posted to comp.sys.atari.8bit.

INDEX

- ☆ Part 1 RAM Upgrades listed by computer
- ☆ Part 2 Video Upgrades 80 Column devices Genlocks
- ☆ Part 3 Operating Systems
- ☆ Part 4 Other Neat Stuff stereo sound, add-ons

Key to abbreviations

- ANL - Analog Magazine
- AC - Atari Classics Magazine
- ANT - Antic Magazine
- AIM - Atari Interface Magazine

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☆ PART I - RAM Upgrades

General

The 6502 microprocessor at the heart of every Atari 8-bit has a sixteen bit wide address bus. What this means is that it can access up to 2^{16} memory locations. That's 65536 bytes. Some people, wanting more memory, came up with a variety of techniques to use more memory. Most were built around the idea of bank switching. Bank switching means that you swap chunks of memory around so that the CPU can see them when necessary. Most schemes use 16k banks, though 4k and 32k have also been tried.

Atari 400

The original Atari 400 had either 8k or 16k. Atari produced a board with 48k. Mosaic produced a 32k board, as well as a 64k board with 48k RAM plus 4 4k RAM banks. (ANL 13, IFC)

Atari 800

The Atari 800 came with three memory slots. Each slot could contain Atari 8k or 16k RAM boards. Mosaic produced 32k and 64k boards. Three 64k boards could be combined for 192k.

Axlon produced the 128k RAMdisk board. It banks 16k, using \$CFFF as a control register. Banked memory appears from \$4000 to \$7FFF.

David Byrd created the "800 PLUS 288K UPGRADE" which rewired existing 16k RAM boards, but required additional work to become fully Axlon compatible. A nasty sort of flame war erupted between David Byrd and Jay Torres of the Windhover Project over who invented the upgrade.

Magna systems produced 256k, 512k and 1M boards which followed the Axlon standard. (ANL 65, 68)

Atari 1200xl

See 800xl.

Atari 600xl

As shipped, the Atari 600xl came with 16k RAM. Atari released the 1064 memory module which expanded the 600xl to 64k. MPP, now Supra, produced the Microram 64k Memory Board (ANL 19, 28)

RC Systems produced three expansion modules for the 600xl, raising memory to 32k, 48k or 64k (ANL 26, 12)

Richard Gore produced the Yorkey, a 256k board which plugs in to the PBI. It provides full compatibility with 130xe type banking. It is for use on 600xls upgraded internally to 64k, or on 800xls. (AC 3/2, 10)

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Atari 800xl

The Atari 800xl came with 64k RAM internal. To access RAM hidden under the OS ROMs, the PIA chip was used (PORTB, used for STICK(2) and (3) on the original 800). Claus Bucholtz published plans for a 256k upgrade which banked 32k at a time using PORTB for control in Byte magazine. (Byte Sept 85)

ICD released the RAMBO upgrade, providing 256k in 16k banks, using PORTB. Newell came out with the 256k XL, which would work on a 1200xl or 800xl, providing 256k total memory. . The two upgrades used different sequences to access their banks. (ANL 44, 115)

Charles Bucholtz updated his upgrade to use 16k banks after the release of the 130xe. Most of the 800xl upgrades can be made compatible with Antic banking. The only possible problem would be when Antic and the CPU are supposed to be using different memory banks.

The Yorky will also provide 256 on an 800xl (see the entry under 600xl).

Newell released 1Meg and 4Meg upgrades for the 800xl. These banked 16k as well, and required disabling internal BASIC to properly access the memory.

Fine Tooned Engineering, having bought the rights to ICD and Newell's

products, is bringing out a third method in the Mars 8. Though not yet released, it will use SIMMs for 256k, 1Meg or 4Meg RAM.

Atari 130xe

The 130xe was the first "official" method of banking memory. It too used PORTB, but with an added twist: ANTIC and the CPU could access different banks. This provided headaches for some owners of "older" upgrades, but few programs took advantage of this feature (SpartaDos Wedge and VideoBlitz demo only).

Upgrades for the 130xe include replacing one set of 64k chips with 256k chips, raising the RAM to 320k. Adding another 256k for 576k total has also been done. These were designed by Scott Peterson, as was a 1088k upgrade.

☆ PART II - Video Upgrades

The most common video upgrades are the SuperVideo series, described in AC 2/6. Plans were provided for the 600xl, 800xl, 1200xl and 130xe. The SuperVideo upgrade provides the forgotten chroma signal on the monitor port. It corrects a number of errors in the parts in the Atari video circuit, resulting in a clearer image,

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particularly on monitors.

Providing TTL output was also covered in AC 2/6. Bob Woolley provided plans for the circuit, as well as instructions for getting TTL output from an XEP80. Be warned that the output is not in the standard Atari colours; on a CGA type screen, the sixteen possible shades are translated into eight colours.

80 column devices

Since the 400/800 were released in 1979, people have been clamouring for better text displays than the default 40x24. Two products were released for the 800: The Austin-Franklin 80 column board and the Bit 3 80 column board were both for use in the Atari 800. They replaced the third memory module. The Austin-Franklin board came with a "Right Cartridge" which provided the drivers. Removing the cartridge disabled the board. Some software would not run with an 80-column board installed.

Ace 80/80xl was a cartridge released which provided 80 columns by using bitmapped graphics on an 80 column screen. A similar technique was used in the Newell Omniview, an add-on for their Omnimon.

Atari's entry into the 80 column field was the much maligned XEP80. For maximum compatibility, the XEP80 attaches to the computer via a

joystick port. It includes three character sets, 8k internally, and a parallel printer port. The software provided by Atari supports a 320x200 graphics mode. This mode only supports direct bit images. Hacks have been released which hook the XEP80 on via the parallel bus.

Genlock

In October and November of 1991, Michael St Pierre published articles in the SLCC Journal describing plans for a monochrome Genlock. A genlock is a system to synchronize live video with a computer image. Graphics can be overlaid, faded in or out, or used for titling.

In 1994, Michael announced Prism Studio, a full colour genlock. It is sold by Mytek.

☆ PART III - Operating Systems Computer OS -----

400/800 Rev A. No self test; Memo Pad mode. Rev B. Fixes several bugs in Rev A.

1200xl XL OS. Some incompatibilities with 400/800 OS

600xl/800xl Revised XL OS. Includes parallel bus handlers. Internal BASIC.

65xe/130xe Revised XL OS. (as above)

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xegs Modified XL OS. Self-test mode changed. Internal Missile Command and BASIC.

Operating System upgrades

UltraSpeed + OS: from CSS.

Supports high speed disk communication. Drives 1 through 9. Any RAM upgrade. Includes three modes: standard xl/xe OS; 400/800 OS; UltraSpeed+ OS. For XL/XE systems.

Omnimon: from Newell. M/I monitor for 400/800. Installs into \$C000 page of memory, otherwise unused.

RAMROD OS: from Newell. Replacement for 400/800. Includes accelerated floating point math package.

RAMROD XL: from Newell. OS speed-up routines, fast math, and Omnimon. Includes option for second OS.

XL Boss: from Allen Macroware. OS replacement for XL model computers. Includes m/I monitor. 400/800 OS compatible.

TurBoss: available from KP and Best. Fast math and fast screen routines. For XL/XE computers.

☆ PART IV - Other Neat Stuff **Zucchini**

In ANL 59,60 and 62, Dr. Lee S.

Brilliant provided plans and software to turn a surplus Atari into a printer buffer for another Atari. He called it "The Atari Zucchini".

The Printer Buffer Routine (PBR) and Disk Emulator Routine (DER) came from B.L. Enterprises. They were cartridges and cables which worked in a similar fashion to the Zucchini. The PBR provided a buffer, while the DER emulated a disk drive on the remote computer. Stock XLs gave 403 free sectors; a 130xe would give 914. (ANL 65, 67)

Voice Master

Covox sold the Voice Master and Voice Master junior. These would capture and record speech. Bundled software attempted recognition of commands, with limited success. (ANL 47, 44)

Parrot

The Parrot was a sound digitizer sold by Alpha Systems. Resembling a paddle, the device had phono jack for input. Antic provided plans for a similar project, called the Antic Sampling Processor. (ANT 8/8, 11)

SoundMouse

Among the more esoteric products ever released was the SoundMouse,

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which interpreted sound to provide a reading on a paddle register. It did not act as a digitizer, like the Voice Master and Parrot did. Bundled software made the lava lamp look mainstream in its appeal. No commercial applications taking advantage of this unique device were released.

Gumby

Chuck Steinman of DataQue created this set of plans for building stereo sound by installing a second Pokey chip (Pokey and Gumby, get it?). Once installed, the second channel has all its addresses 16 bytes higher in memory (\$D210 - \$D21F). A small number of demos have been released in stereo. <ftp://atari.archive.umich.edu/Atari/8bit/Sound/gumby.arc>

PIA2

With the use of PORTB for RAM banking, hackers were looking for more parallel outputs. This plan, for adding one more PIA chip, includes notes for adding two more. It was intended as a means to control large RAM upgrades. (AIM 3/2, 16)

Critical Connection

A long time ago, in a galaxy far, far away, was a mystic operating system

known as CPM. A company named USS Enterprises produced the Critical Connection, a device to permit a CPM computer to emulate disk drives for the Atari. It was a cable, plus software for the CPM end of the system. The CPM system could also act as a printer buffer, and the CPM keyboard could be used in the place of the Atari keyboard. (ANL 39,103)

SIO2PC

With the demise of CPM and the rise of the IMI cartel (IBM-Microsoft-Intel) a new system similar to the Critical Connection arose. Nick Kennedy developed the SIO2PC hardware and software, which permits any PC with a serial port to act as up to four disk drives for an Atari. It can also act as a printer buffer.

Computer Eyes

Computer Eyes was a video capture system which plugged into two joystick ports. It could render images in a variety of modes. It required a composite video source. (ANL 35, 53)

Easy Scan

Take a cartridge, add a fibre-optic cable, and hook it onto a printer, and you've got Easy-Scan, an image scanner for the Atari 8-bit. Innovative Concepts produced this item. (ANT

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7/6, 43)

WIMA Radio, Lima, Ohio

This radio station, when automating 6 broadcast hours daily, created a hardware and software package built around a 130xe for control. Control was via joystick ports and tone decoders. (ANT 8/7, 30)

Comp-U-Temp

This provided 8 or 16 channels and 2 or 4 sensors. It would monitor the temperature, with options to log results to disk or printer, or to sound an alarm if the temperature strayed out of set boundaries. The software was described as "cumbersome". (ANL 48, 35)

Turbo 816

Released by DataQue, this provided a replacement OS as well as a replacement for the 6502 CPU. A 65816 was substituted, providing new opcodes and a 24 bit address space (16Megs vs 64k with the 6502).

Sweet 16

Released by Fine Tooned Engineering, this provides a 65816 CPU to replace the 6502.

MIDIMATE

MIDI stands for Musical Instrument Digital Interface. It is a system for computers to record, replay and control musical instruments.

MIDIMATE, when combined with MidiTrack software, permits an Atari 8-bit to take control. (ANL 33, 26)

MicroNet

Supra provided the Atari community with its first networking product. MicroNet provides nine SIO connectors. Eight are for computers. The ninth goes to whatever peripherals are to be connected. The system served to isolate the computers electrically. It did no software checking, meaning that two or more users attempting to print or save at the same time could trash each others output. (ANL 51, 76)

MultiPlexer

CSS provided a better way to network. The Multiplexer system requires one host system which has all the disk drives and printers for the network. The slaves are connected via the cartridge port to the host, and all their disk and printer i/o is rerouted to the host. All the systems involved require their OS replaced with a special multiplexer OS.

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MIO

ICD manufactured this wonderboard in 1987. Connected to the PBI or ECI, it provided either 256k or 1Meg of RAM, two RS232 ports, a parallel printer port and a SCSI hard drive port.

MIO II

Currently under development by Fine Tooned Engineering, this PBI/ECI board will provide an interface and power supply for an IDE hard disk. It may also include extended memory support for CPU upgraded computers, as well as a parallel port.

Black Box

CSS manufactures the Black Box, a PBI/ECI device that offers an optional 64k printer buffer. Its main attractions are its m/l monitor, 19200 baud RS232 port, parallel port, and hard disk interface. The parallel and serial ports do not use standard DB9 or DB25 connectors; custom cables are required.

Floppy Board

This is an add-on to the Black Box, also from CSS. It permits standard floppy drives, 360k, 720k, 1.2M and 1.44M, to be attached to the Black Box. Since they are connected to the

PBI, these drives operate extremely quickly.

Supra/KP Hard Disk Interface

Supra released one of the first hard drives for the 800xl. It hooked up via the PBI. KP bought the rights to the interface from Supra.

R-Time 8

This is a clock cartridge for any Atari from Fine Tooned Engineering. It includes a pass-through connector so that any other cartridge can be plugged in as well. Though primarily intended for SpartaDos, software for other DOSes is included.

Mars-8

This is still under development from Fine Tooned Engineering. For 800xls only. Memory expansion of 256k, 1M or 4M. Install internally Action, Basic XL/XE, MAC/65, SpartaDos X, R-Time 8.

Atari 850

This device hooks into the SIO line, and provides 4 9-pin RS232 ports and a 15-pin parallel port. The RS232 ports are NOT IBM PC standard. The MIO and PR Connection use the same pinout.

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P:R: Connection

This device plugs into the SIO line, and provides 2 9-pin RS232 ports and a 15-pin parallel port. It is powered by the SIO line. The Atari 1200xl requires an internal modification to work with this device, or with the Atari XM301 300 baud modem.

Voice Box II

Manufactured by the ALIEN Group, this speech synthesizer even made it into TIME Magazine in their "Machine of the Year" issue in 1982. Plugging into the SIO line, this device would produce speech of the traditional computer variety.

R/128 RAMdisk Printer Buffer Spooler

Protronics of California announced this 128k RAMdisk/printer buffer which interfaced via the joystick ports, offering it as a replacement for the 850. A 512k upgrade was promised. (ANT 2/8, 106)

N1858-32

Newell Industries announced this 850 replacement in 1983. It offered two serial and one parallel port, along with an expandable 8k printer buffer. (ANT 2/8, 106)

Oscar Model 1

This bar-code scanner was from the Databar Corp. The intent was to permit the speedy entry of computer programs which would be encoded in magazines. (ANT 2/8, 107)

1200XL PBI

Hackers love the 1200xl for two reasons: because of all the space available within the case, and because of the great keyboard. Bob Woolley came up with this set of plans for adding a parallel bus interface to the 1200xl.

<ftp://atari.archive.umich.edu/Atari/8bit/Modifications/pbi1200.arc>

Wanting to get in touch with any TWAUG member via e-mail?

Here are the addresses:

John Matthewson:

J.Matt@Cableinet.co.uk

Alan Turnbull:

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Max Gerum:

amg@zetnet.co.uk

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BUSINESS OR PLEASURE

There is quite a large number of TWAUG members now who use a second computer with their 8-bit, i.e. an Atari ST and wondering what this computer can do.

Your ST is the perfect companion for any business activities, be it personal or professional. Have you ever dreamed to be your own boss? Working from home could be the answer.

You don't need to be a high-powered executive to work from home. If you are a student who needs to produce projects or essays and are expected to

hand in neat homework. For most people this could mean spending over a thousand of pounds for a PC. A friend of mine just done that, he spend nearly 2 thousand pounds on a PC for his son to do his home work on. I have spend about a quarter of that maybe less for my ST set up and I do the Desktop Publishing, home finances and Databases on it. I have also done some CV's, posters and fliers, invoices and tax returns, all

done on my humble ST.

I never made any financial gains for the work I was doing, it was all done for friends who were doubtful about the ability of the ST, and I do it all for pleasure. So you see it can be done and there's no need at all to spend thousands of pounds when a few hundred will do.

I've got a room set aside which is set up as a small office and I know loads of people who have a similar set up and get results to rival those from

Your ST is the perfect companion for any business activities, be it personal or professional.

more expensive computers. For those seeking financial gains will surely find some good ideas to make a few bob running

a small business from home with the ST.

Despite its age, the ST is one of the most versatile computers going. With its expansion capabilities, you can connect all kinds of modern equipment to it, including scanners, CD-ROM drives, hard drives, modems and MIDI equipment.

Here are a few ideas to run as a small business. Running any mail

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order enterprise, such as a PD library, for example could employ many of your ST's abilities. You could duplicate disks using FAST-COPY.PRO, this program is an ideal

disk copying tool if you run a PD service. You can

specify the number of floppies you want to duplicate and it's much faster than using the Desktop's copying facilities. I use this program for all my copying.

Print labels using any of the PD labelling utilities available and keep a customers database on your ST.

There are a number of database programs available. One example is AtariWorks, this integrated package provides a word processor, a database and a spreadsheet. You can exchange data files between its various components and is ideal for business use. But it does need at least 2mb of RAM.

How about running an art and design service? This service is ideal for any small organisation, such as a local club, parish church, or even a one man business who could require posters, cards or newsletters. Many such small bodies lack any computing equipment of their own, that's where you come in providing for all their graphical needs. All you will need is a word processor, I've mentioned one of the many available above, or

Protext is another, you will also need a desktop publishing program and some art software. For the desktop publishing program you don't need to look far for an idea, PageStream is

available cheaply nowadays, there is also

The best business is the one you think of yourself

Timeworks, Calamus or Easy Text Professional.

Or what about running a Musical Service. If you have a MIDI keyboard and plenty of musical skill you can use your ST to produce jingles and incidental music for local performers. You might be able to persuade a local drama group or a DJ to commission an original piece of your music to use in their act. The best business is the one you think of yourself, so look for a gap in the market, there are no rules and no limits, although it's always good to make a profit.

Or what about a scanning service for other computer users, A4 size scanners have come down in price in the last couple of years. Or how about offering a genealogy service using Family Roots 2.

Accounts, if you look after the pennies the pounds will take care of themselves. You will need financial data to check the health of your business. To keep abreast with your profit and loss accounts you need an

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accounts package, I use Personal Finance Manager, still available and cheap. This program was one of Atari's productivity packs, it's very good value. This program can help in good financial management. In business you need to know who owes you what, manage your cash flow and prepare your tax returns. By

You don't need to run a business to use any of the programs available for the ST, you could keep a check on your personal finances, or write the odd letter with your word processor

presenting your data visually enables you to make decisions more easily, the Personal Finance Manager does just that. You don't need to run a business to use any of the programs available for the ST, you could keep a check on your personal finances, or write the odd letter with your word processor, or try out your skill, by using a Desktop Publishing program and set up a flier or your own invoice.

By shopping or looking around all the software mentioned above can be picked up cheaply now, so there is no need to dig too deeply into your pocket and I must say that these programs do a professional job.

PUBLISHING BUSINESS

You've read so far and you know how to use desktop publishing programs, you have a flair for document layout and now you are searching for success - financial or otherwise in your own publishing business. You are armed with the best tools available to you. Apart from the right hardware and software combination, you also need your own stationery.

Lets look at the hardware, in my opinion your ST should have 4 Meg of RAM, besides the internal floppy a hard drive is a must. The reason I say the hard drive is a must is because you don't have to change disks and you can have a greater selection of fonts, and is much faster to access the programs.

For the software I would recommend the best Desktop Publishing program, Calamus, there is a big selection of Calamus fonts available. It also has its own art program.

You are now set up for your business, you must remember that if you intent to offer your services on a

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professional basis, you will need your own stationery which should also look professional. The first thing is a name for your business - try and think of something memorable but not too long. Now you need to decide what information should be displayed on your business card.

Do not over do it, the problem with listing all your services on the card can look very messy. The most attractive cards are the simple ones where there is just the company name, card holder's name, address, telephone and fax numbers. Remember that the quality of your work will be judged solely on the artistic presentation of your business cards, so it is well worth giving some extra thought to the final appearance. To give you an idea what looks good, collect as many different cards as possible. Unless you have been trained in graphics design, keep things simple and you won't go far wrong.

address, telephone and fax numbers to give a more pleasing effect. Experiment, but try and stay faithful to the overall company image. This applies equally to your own stationery or to a prospective client's.

Since you may not have actually done any outside work at this stage and depending on the type of work you want to do, at some stage you are likely to be asked for examples of your work. Prepare a portfolio with some samples of your work you are prepared to do and put them into an A4 ring-binder which can be bought at any stationers with plastic wallets.

Try printing some samples on coloured paper to give a visual lift to the overall appearance of your portfolio. There are a multitude of paper tints, weights and grades on the market which can significantly enhance your work. Your portfolio could include A4 posters, or party invitations, sales leaflets, CV's,

invoices, newsletter front pages, club membership cards, labels, anything at all you feel

is likely to be applicable to the people you want to attract to your business.

If you use Calamus for your DTP

Your letterheads and compliment slips should be designed on a

The quality of your work will be judged solely on the artistic presentation of your business cards

similar format to your business cards. Depending on the style of your company name, you may find that you need to change the layout of the

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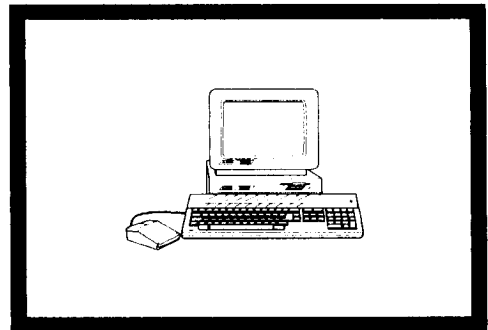
program, you will find that there are thousands of fonts available. You could start by printing out all your fonts in your library, typing in "The quick brown fox jumped over the sleeping lazy dog," gives you every letter of the alphabet. Arrange the fonts in sections beginning with the serif-types, followed by the non-serif types. Serif type fonts such as Time Roman, Garamond and so on. Non-serif fonts such as Helvetica, Futura ect. And ending with the fancy fonts like Script or Old English. But do not forget to print the font name alongside each example. Next, gather together all your best clip-art and print out a good selection, if you would like more clip-art than you've got at the moment, there are loads of outlets that sell them.

There are loads of brochures and leaflets pushed through your letter box - hang on to them, as they can become a useful source of inspiration, who knows, it might not be long before your work becomes a source of inspiration to others. Study advertising in newspapers and magazines for the techniques professional ad people use for getting messages across. It's surprising how many clients not only ask you to provide the layout when you're putting a leaflet together, but also expect advice on the sales message. You may not feel too confident tackling that sort of thing at first, but

with a bit of practise, you will probably find you actually enjoy it. And you get paid for it!

There you have the perfect and professional way to start your desktop publishing business - now all you need to think of is that inspirational name...

I have been there, I've done it. As mentioned above I have advised on sales messages, printed invoices, restaurant menus and posters. But I haven't got the T-shirt!!!



AtariWorks Wordprocessor Database & Spreadsheet

In the article - BUSINESS OR PLEASURE - I mentioned that I use AtariWorks, so I've decided to introduce you to this integrated package of word processor, database and spreadsheet. This package is a real GEM of a program especially when you use it with NVDI.

NVDI 4 is what I use, it makes use of the Bitstream processor technology and can interpret Speedo and True Type fonts and there are loads of these fonts available for your use.

Let's concentrate on AtariWorks first. The one drawback with this program is it won't run from the floppy drive, that means you need a hard drive to run it.

The program consist of 4 disks. Disk 1 contains the Main program, Installation and Resource files. On disk 2 and disk 3 you'll find the dictionary files and the Thesaurus. The fourth disk is Mastering AtariWorks, this is the Hypertext Guide used with AtariWorks and it offers quick references to all commands with summaries and tutorials. More on this as we go along.

First you must install the main program. Installing the software couldn't be simpler, make sure you've got the master disk in drive one then double click on INSTALL.PRG and follow the screen instructions. You do not need to install it in the boot drive (partition C), instruct the program which partition you prefer and the install program does the rest. When the installation is completed insert the Mastering AtariWorks disk in drive A and copy the following files into partition C, MA_WP.ACC, MA_WP.RSC, MA_WPC.RSC, MA_DB.ACC, MA_DB.RSC, MA_DBC.RSC and MA_WORKS.CFG, the ACC files are the Accessory files, they will load into memory when you boot up the computer. Next copy the folders IMAGE.DAT, TEXT.DAT, PRINTERS into your C partition or if you prefer in the same directory as the Master program and the TUTORIAL folder into the same place.

After you've copied all the files into your hard drive make sure you have two empty accessory slots available under the Desk menu to install the hypertext guides. You must now

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re-boot your computer to install into memory the two hypertext accessory files. Move the mouse arrow to the Desk menu on the Menu Bar and click on AtariWorks WP or AtariWorks DB item name to display the hypertext guide window. Now click on the Configuration icon, highlighted in icon tool bar screen dump, to display



the configuration dialog box. All the settings are made in this dialog box. Unfortunately I am

unable to screen dump the dialog box, but I will draw the fields displayed in the box as they are shown. You must click on them to configure the program.

selector and open the folder then click on the OK button to get the pathname.

Next we need to initialize the printer.

Initialize Printer

Load Printer Driver

Save Printer Driver

Load in the printer driver by clicking on the < Load Printer Driver > button, the file selector will appear. Select the printer driver filename in the PRINTERS folder that represents your printer and click on the OK button to install. Now click on the < Save Printer Driver > button to call

Text > F:\TEXT.DAT

To set the pathname for the program to find each folder, click on the < Text > button to prompt the file selector on screen. Open the TEXT.DAT folder in the drive partition you have chosen and open the folder and click on OK.

Now repeat the same steps for the <

Image > F:\IMAGE.DAT

Image > button. You must also set the pathname for the Clipboard in order for the Clipboard icon to work correctly. Usually the hard drive partition for this folder is drive C:\, I keep this folder in the boot drive C:\, but it is up to you depending the space in that drive. Click on the Clipboard field to display the file

the file selector and enter the printer driver name in the

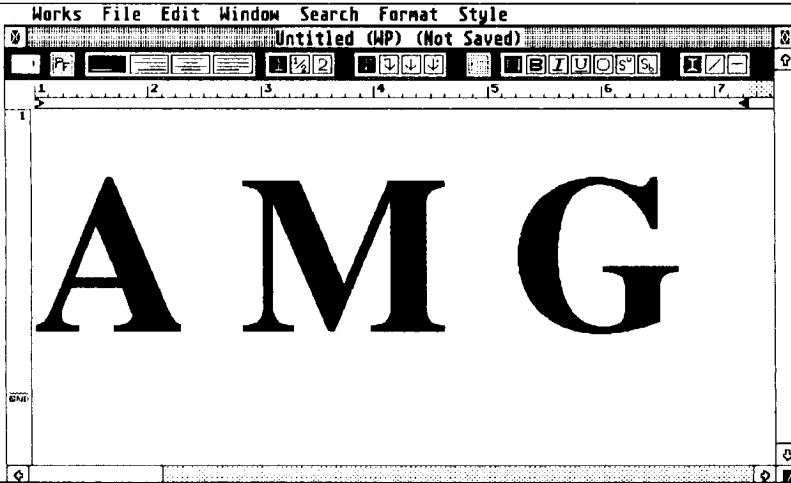
text field. All printer drivers have the "PRT" extender. You can now save the printer and all other settings in the MA_WORKS.CFG filename using the < Save Settings > button.

Mastering AtariWorks is a Hypertext Personal Training Guide for all users.

Especially the novice user will find the simple step by step approach easy to understand.

Each AtariWorks command is explained in detail and the necessary information on how to use them. You will find when trying to master, AtariWorks Word processor, Database or Spreadsheet and find any topic difficult, just click on either

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This screen is displayed when you click on New. I typed in my initials with a point size of 144, it's an example to show what can be achieved with Works

on the DB.ACC or WP.ACC, which should be installed as accessory tools, and all the help is on hand.

The initialization of the printer in the Wastering AtariWorks is to give you the option to print out the Hypertext Guide instead of reading it of the screen, some users may find it more difficult text on the screen.

You have also the choice of two text sizes - small or large. To choose to size, click on the desired text size button to highlight and exit the dialog box to change the text display size.

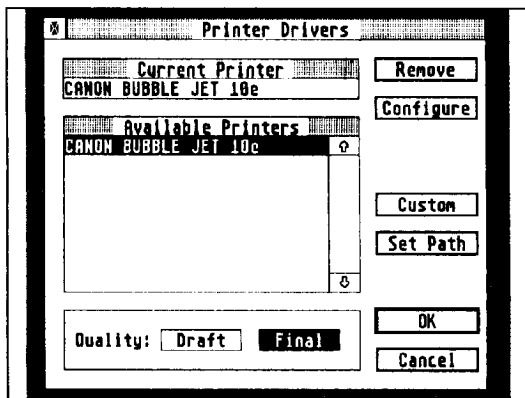
After you've configured all the options found in the Configuration Dialog Box you can start using the AtariWorks. When you start the program you'll see the item selector box displaying

the icons for each AtariWorks tools.

Word Processing is the default, this icon is highlighted. Click on "New" and a new document window opens on the Desktop, if you click on "Open" a file selector box listing all the files and folders on the current disk.

When you select a New Document window you have a choice of importing ASCII files with the extender TXT or you can start typing your own document. The program will remind you that your document has not been saved. To save the imported ASCII document select from the File Menu to display the Save As... dialog box and type in your chosen filename. The AtariWorks word processor saves all documents

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footers can have a different format and font, you can also include Date and Time and of course page numbers. It also has a good Spelling Checker, User Dictionary and Thesaurus.

You can draw Shapes, Lines, Boxes and Circles. You can cut, copy, paste, resize or change the line width of any selected pattern. You can also import pictures, choosing Import Picture... from the Edit Menu, a dialog box appears giving you the choice of the picture to import. You can select GEM VDI Metafile, or GEM VDI Bit Image file, when you click on OK a file selector box will appear to select the picture.

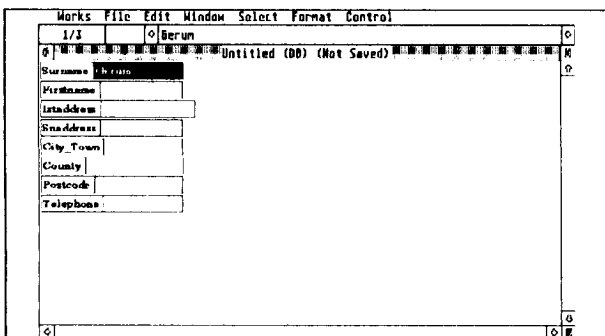
What about using the Mail Merge facility. There is no need to exit the program and re-boot, move the mouse pointer to the <File Menu> and click on Close then choose New from the same File Menu.

When you set up a new database from scratch, because there's no information in the database yet, AtariWorks asks you to set up fields first.

When you choose New from the File menu, AtariWorks opens a form window and creates an empty document with the name "Untitled", you are then asked for the name of the first field. Type in the

in the Works format with the extender STW.

The screen dump on the previous page, shows the three characters with 144 point size, I typed them in after I selected New Document. To choose a different font, go to the Style...Menu and choose Font, a Font Face Selector dialog box will appear, select the font and size then click on OK. You can create Headers and Footers, they are not displayed on the screen, but only appear on the printed document. The headers and



This screen display is a Form window.

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name, then click on Add Field button or just press Return. The field name you typed is accepted and the dialog box reappears to type in the second

that field. You will see that the information you are typing is displayed in the top line, when you press [Return], that entry you've just

Surname	Firstname	Istaddress	Sndaddress	City/Town	County	Postcode
Gerun						

typed will be entered into the field and the next field is highlighted ready to enter your next information.

The screen dump displayed on the previous page is the Form window and the display shown here is a List window. To switch between the windows

field name. After adding the last field name you need click on Done. The dialog box disappears and displays the fields you have created in a form window.

The first field is highlighted and you can now enter your information into

go into the Format menu and the very first option is either Show List or Show Form, click on the one shown to toggle the window. Entries can be entered into the fields in either of the windows, first highlight the field and then type the information and press [Return].

Qty	Description	Price	Total
24	Electric Vacuum - Model #6251	£56.90	£1,365.64
54	Table Top Water Filter Model #6211	£10.45	£564.30
17	Dust Bin & Brush	£5.92	£100.64
45	Blenders Model #612A	£34.90	£1,570.50
9	Microwaves Model #6211	£56.90	£512.10
4	Gas Range Model #612	£150.34	£601.36
10	4-Head VCR Model #1212	£124.90	£1,249.00
5	Atari Falcon Computer with 504-Mega	£274.24	£1,371.20
5	Atari VGA Color Monitor Model #4121	£182.91	£914.55
10	Sony Discman Model #61201	£99.91	£999.10
6	Toshiba 27" TV Model #671	£2148.82	£12,912.92

You will find when you first create the fields that some of those fields are not large enough to show the full information. These fields can be enlarged with the mouse arrow, point the arrow at the field box, press and hold the left mouse button and drag to the right.

You can also change the appearance of the fields, to put borders around field

This screen dump is a Spreadsheet document demonstration.

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names, click on Border Name or Border Data from the Format menu. To put field names or entries in bold type, click on Bold Name or Bold Data in the Format menu.

You can also set field attributes to determine how the information is displayed. Click on the Set Field Attributes in the Format menu to display the Attributes dialog box. Click the options you want for the field, then click on the OK button. There are loads more options available but are too numerous to write about here.

As most of you will know a Spreadsheet is made up of vertical columns and intersecting horizontal rows. I have not made use of the AtariWorks Spreadsheet and therefore not familiar with it. But I will include a screen dumb with a Template for an example.

When you start AtariWorks, the item selector box containing four icon tools, Word Processor, Database, Spreadsheet and the fourth one is the Tool icon, this is used to combine AtariWorks tools together. Copying information among the AtariWorks tools is now easy. Select the information, copy it to the clipboard and paste it to its destination. You don't have to close windows or exit the program you're in.

VCS GAME REVIEW

by Ye Olde Atari 8-bit Owner

Lets dip into the VCS cartridge bag, and see what we have, it's...

NAME: STAR RAIDERS FORMAT:
VCS 2600

SETUP

Connect up the system and plug in the cartridge in the normal way, as you have done all of your VCS life.

CONTROL

Console control:

(RESET)- start game (SELECT)- set difficulty,

10 20 30 40 <- No. of targets

400 600 800 900 <- energy at start

BW/COLOR switch- works as usual

*-LEFT PORT switch- select CPU on/off

*-RIGHT PORT switch- select shield on/off

(*-NB: left position is on, and is fixed. Right position is off, and allows keypad control to function for on/off)

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Touchpad control

Touchpad keys work as labelled.

Fore View - Forward view out of cockpit used for combat and general sight seeing.

Gal Map - Displays the galactic map showing the location of the base square, and the current location of the enemy and your self.

Hyperwarp - For engaging hyperwarp, allowing fast travel to another location on the galactic map, energy permitting. Position cursor onto desired destination square and engage.

CPU on/off - Enable or disable computer, necessary in game, controls radar screen, photon cross hair sights, makes various tones and beeps that signal certain events.

Shields on/off - Enable or disable shields, very necessary, without shields one hit and your history.

Joystick Control:

Trigger - Each press will release a photon charge, left and right bank alternating - auto fire is useful.

Stick forward - Craft descends.

Stick back - Craft ascends.

Stick left - Craft turns left.

Stick right - Craft turns right.

GAME BRIEF

Select level Start game Select shields/cpu View gal map Hyper to enemy Attack enemy and destroy (recharge/repair as required) Save base accept new rank -End.

IN GAME PLAY

On switching on your console, you will see a star field and the words "Star Raiders (c) Atari 1982" at the top. First select the level of game play you want. Each time 'SELECT' is pressed the border changes colour as 'T10' cycles up to 'T40' and back again, 'T10' being the easiest mission. Press 'RESET' to start. Select CPU/Shields either by touch pad control or port switches. The main view screen takes up the top 4/5 ths of the screen and shows your forward view out side your craft, with two horizontal cross hairs in the middle of the screen. One protrudes from the left hand side of the screen and the other from the right, both are level and both show the target path of their respective photon charge, when either photon bank is fired. The bottom 1/5 th of the screen is for information following left from right you have:

'E000' E, followed by a three digit number, showing energy left.

'X' X='P,E,S,C' here you have space for a single alpha numeric character which cycles through, '(P)hotons,

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(E)nergy, (S)hields, (C)PU. The condition of each is displayed by its' luminosity the brighter it is displayed, the more damage to it.

'T00' T, followed by the number of targets to destroy, depending on the level selected.

To the extreme right is a little radar screen displaying enemy craft only.

Now familiar you can press 'GAL-MAP' on your touch pad, you will see a sixteen square (4x4) grid.

Somewhere in this grid are three different pieces:

- 1) The elaborate (flowery) shaped piece is your base square.
- 2) The arrow head shaped piece is the enemy force, upto forty of them could be hiding behind it (wow!).
- 3) The last piece a very lively (read bright and blocky) looking character, represents you. This of course is the famed paddle from super break-out - oh mighty paddle what an honour this is.

Without moving the joystick you will see that your craft automatically homes in on the enemy force, But it is quicker to use hyperwarp. To hyperwarp you use the joystick first to move the cursor to your desired destination , the cursor is behind the paddle shape which represents your position on the galactic map. It is also

slightly lower and a darker colour, of which a thin band is visible as an indication to you that something is there, so move that joystick. Oh look it's another paddle we have been blessed again, let us bask in this glory- aah. Once you have moved your cursor to the location you desire to hyperwarp to, press the 'HYPER-WARP' key on the touch pad. Feel that speed as the hyperwarp is engaged, hear that sound- this is what VCS life is all about. Provided your not a coward your destination was the enemy force (the arrow head shape). You can press the 'FORE-VIEW' key on the touch pad and let the battle begin. First your craft reduces its' speed when your destination is reached, then a tone sound is heard signalling the enemy presencē at this location (unless it moved during your warp). As the enemy appears before you a beep sounds to alert you of this. At this point your trigger finger should be at one with your joystick. There are three craft types to contend with:

- 1) An 'H' looking craft.
- 2) An inverted 'V' looking craft.
- 3) A pair of 'Cymbals'.

Each craft type acts differently, but die the same.

If you look at your radar it will show you exactly where the enemy is when it goes out of sight, Do not keep still

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at this point as you can easily be hit from the side or behind. Every time you sustain a hit energy is lost. When your energy is around 200, it is usually a good time to prepare to recharge, depending on how close you are to base. When recharging energy, damage is repaired too. Press 'GAL-MAP', on the touch pad, move the cursor onto the base square, press 'HYPERWARP' on the touch pad, wait for hyperwarp to finish, then wait for the message 'complete' to appear at the bottom of the galactic map screen. Now reposition the cursor over the enemy, press 'HYPERWARP' on the touch pad, then press 'FORE-VIEW' on the touch pad, and carry on with the battle. It is possible that the enemy will end up on your base, along with you, an indication of this is your energy is recharged and any battle damage you have is repaired. With the enemy on your base you must act fast to save it. The loss of your base will mean no more recharging or damage repair, and should you destroy the enemy your ranking will be lower without your base surviving. Play ends when you or the invading enemy Zylon force are destroyed. You loose from a lack of energy or from overwhelming battle damage resulting in the catastrophic loss of your ship. The end of your foe is signalled when 'T00' is reached, and upon your success a rank is awarded to you.

OVERALL

VCS Star Raiders plays a good game, and will hold your attention during play, even though your enemy is in a single formation and easy to locate. It is not any easier to destroy, because with smaller groups you rest between skirmishes, and here it's one long slog. With frantic break offs when you need to recharge. As the enemy draws ever nearer to destroying your base, with you in pursuit.

The game design is straight forward graphically it's uncluttered, the sound effects work well, and there are no silly joystick moves, thanks to the touch pad. Although the touch pad has 12 keys, you only use 5 of them. The rest of the keys are unlabelled and have no function. Extra functions might have complicated the game play, but it would have been nice to at least be given access to them. The lead on the touch pad is not very long, if it was longer, more ergonomically designed, and incorporated some of the main console functions, ie RESET, SELECT, or PAUSE. This would have allowed you to get more comfortable for play. The touch pad can either be placed next to the VCS, held in your hand, or placed somewhere close like on your lap. The first few games you play help to familiarize you with the touch pad, this is what happens when your used to paddles and joysticks. When you

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are more familiar with the controls however, real play can begin.

>>>>END<<<<

XE Video Mod.

Part 1.

by Ye Olde Atari 8-bit owner

The XE series of 8-bits are noted for their bleached out colour, and are otherwise tolerable, a good solution for improved video performance was published in AC, by Charles Cole. This is an upgrade I have used and it works very well. Independent to this upgrade is another method of restoring colour to the XE range, and can be used along side the upgrade provided by Charles Cole.

If you open up your XE and look at the bottom left hand corner of the mother board to where the crystal is and notice a vacancy of components to the right of it (just under IC designation U6, C06199X-XX Freddie). The components are:

Q4 = TRANSISTOR 2N3904 NPN

Q5 = TRANSISTOR 2N3904 NPN

R26 = RES: 2.2K OHM 1/4W carbon @ 5%

R18 = RES: 220 OHM 1/4W carbon @ 5%

R27 = RES: 220 OHM 1/4W carbon @ 5%

R29 = RES: 1M OHM 1/4W carbon @ 5%

R28 = RES: 910K OHM 1/4W carbon @ 5%

C32 = CAP: 18pf ceramic axial, NPO

C33 = CAP: 10pf ceramic axial, NPO

Solder in the respective component to its' circuit location, and on successful installation of the components referenced above, you shall see full rich colour performance, as it should have been.

Just as the vacant U35 IC slot is for an alternative gate array arrangement, these components form part of an alternative video circuit.

On an older production XE you might be fortunate in having one of these alternative circuits fully working, but for the mass majority, of production XE's you do it yourself.

Any blunder(s) you make are of your own doing, so congratulations.

>>>>END<<<<

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XE Video Mod.

Part 2.

by Ye Olde Atari 8-bit owner

This is an addition to that fine article mentioned in part 1, the XE video upgrade by Charles Coles. Unlike super video 2.1XL, the XE video upgrade does not include a CV disable switch. This article shall include one and when in use it will act like the CV disable switch as used in super video 2.1XL, when the luminance signal is used from the monitor jack.

To go over the switch function, if your video source is connected through the luminance output of your switch it will toggle composite video on and off, composite video affects the clarity of a luminance signal. If your video signal is from your composite video output, then the luminance signal is toggled on and off, adding luminance to the composite video signal will give a sharper signal, the main reason for this little modification.

PARTS REQUIRED

1 x 25 OHM resistor 1/4W @ 5%

1 x 3 pin 2 position SPDT switch

- 2 x lengths of insulated wire
- 1 x length of insulation tubing

Open up your XE to get to the board, at the rear in front of the monitor jack, you will find a line up of components. Using the transistor Q3 as our reference component. To the right of Q3 we have a resistor R204, mark this component. Three positions further down from Q3, we have component L7 mark this component too.

WORK OF BOARD

- 1) Trim two insulated wires to go from either of the components marked on the circuit to go to where you desire to have your switch mounted.
- 2) solder one end of each wire to the switch, soldering one end of one wire to the middle pin of the switch, and one end of the other wire to any one of the two remaining outside pins.

WORK ON BOARD

- 3) On resistor R204 marked earlier, we shall be soldering our 25 OHM resistor, on the top lead end nearest the monitor jack. So trim one end of our 25 OHM resistor to a suitable length, then solder it to the top end of R204.
- 4) Now solder any one of the lengths

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of wire attached to the switch, to the top end of component L7 marked earlier.

5) Before soldering the remaining wire to the top lead end of our 25 OHM resistor, (which is soldered to R204) get some insulation tubing like heat shrink, with enough length to cover the resistor body and the resulting solder joint to be performed between the wire and the 25 OHM resistor. Shimmy this length up the remaining wire out of the way, so you can slide it down to cover the 25 OHM resistor and joint after soldering it.

6) Now trim the remaining lead of the 25 OHM resistor to a suitable length and solder the remaining wire onto the 25 OHM resistor lead, and slide down the insulation to cover.

You can now switch on your XE and check the function of your switch. Once happy with the performance you can mount your switch and reassemble your XE.

Any blunder(s) you make are of your own doing, so congratulations.

>>>>END<<<<

XBOOT

What is XBOOT?

Let me start at the beginning. When you run your ST from floppy disks you will find that it is easy but slow. You set up each individual disk with your program and away you go.

If you have a Hard Drive attached and you use it as the boot drive, you will find that you must do some alterations before you can run your program.

Anybody, running his or her system from the hard drive, will know that the "C" partition is the boot disk as default, unless you change it.

Let me give you an example: I use XBOOT - a Boot Manager. It is installed in the "C" partition, when installed you will find XBOOT has installed itself into the Auto Folder and must run as the very first program.

The main screen of XBOOT will be displayed on the screen after boot up and all the programs in the auto folder all the accessory files and CPX files will be shown in their proper section of the main XBOOT screen. You can now select the programs you want to run by clicking on each program and also the accessory files to run with the programs. Those selected will have a tick beside them.

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DISK CONTENTS

Side A:

- The Wall - Tetris type game.
- Deathzone - Shoot them up type.
- Puzzle - Figure it out yourself.
- Tetrix - Another tetris clone.
- Maze War - As the name suggests.
- Resurex2 - Alt Reality City & Dungeon Maps.

Side B:

- Word Puzzles
Including Crossword, Hide 'n' Go Search with editor and printer.

XBOOT

continued

The XBOOT screen is divided into four main sections. On the left is the section for the auto folder programs ("PRG"), next to that is the section for accessories ("ACC"), to the right of them is the CPX modules ("CPXs"). The fourth section is the ("SET") partition, this is where you set up the program to run.

Let me give you an example:

I run TIMEWORKS with G+ Plus, the accessories are G+Plus Accessories, HotSaver and (X)IMG-Snapshot. I therefore would click on G+Plus in the PRG section and in the accessory section click on G+Plus Accessories, HotSaver and (X)IMG-SnapShot, all these names will have a tick beside them now and are a SET. I would now click on the Set Icon, that's the second one down in the stack of the picture symbols and enter a name, for this Set I chose TimeWorks 2. This is only a short explanation on how best to run your programs from the hard drive.

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ANNOUNCEMENT

THE TWAUG CD

We are putting together a CD containing our complete updated P.D. Library and issue disks.

These will be in ATR format and ready to run from the CD.

All our Newsletters will also be on and ready to read in ADOBE PDF format.

Adobe Acrobat Reader is on the CD.

Complete P.D. listings in PDF format.

Emulators and emulator utilities are also included.

The CD will be available at the show. Price ?

