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SAN LEANDRO COMPUTER CLUB October 1989



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Many thanks to those who take the time and effort to contribute to this publication!

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CONTENTS October 1989

FEATURES

Pounding on the 8-Bit by Bob Woolley

Bob continues to prove the 8-Bit is alive and well

4

8-Bit Beginner Boogie by Dave Morel

Check this out, two 8-Bit articles, alright!!!

6

Review by Bill Pike---Spitting Image

9

Update From Darryl May

The latest news and important events revolving around our favorite computers from our intrepid field correspondent now on extended assignment in a foreign territory.

10

DEPARTMENTS

Moran's Minutes

A light hearted look at the events of the last main meeting.

13

Application

If you are not a member yet, here is your chance. Or maybe you know of someone who would enjoy this timely information.

8

Calendar

Make sure you don't miss important meetings and events. Get specific help in your area of interest.

15

SEE YOU AT THE MAIN MEETING September 5th

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Pounding on the 8-Bits

Buy your own / Share what you know / 8 bits are plenty

*Here is more information on the Black Box from CSS.
Sounds neat!*

The Black Box is a add-on board for the Atari 600XL (upgraded), 800XL, and 130XE 8-bit computers. It is a T-shaped board that plugs into the PBI port of the XL computer, or the ECI and cartridge ports of the 130XE. Connectors for both types of computers are built-in to the Black Box, so no adaptor boards are necessary. A cartridge port is available on the board itself for 130XE users, since the board plugs in where cartridges are normally added. The board is 12 inches wide and 3 inches deep, sitting back 3 inches from your computer. It has two switches, two push-buttons, and a set of dip switches on the top.

The Black Box provides many unique and useful functions. The three primary functions are: RS-232 serial modem port, Parallel printer port, and a SASI/SCSI hard disk port. A fourth floppy disk port for connection 3.5" or 5.25" floppy drives will be available at a later date.

The RS-232 port provides the full RS232 specification signal levels for a modem, or other serial device. It emulates the Atari 850 interface very closely, but goes beyond by providing 19,200 baud capability. The R: driver is built-in to the Black Box, so it does not use ANY user memory!

The Parallel Printer port interfaces to most all Centronics-type printers. You may assign the printer number and linefeed options from within the Black Box's configuration menu. The Black Box also provides you with a printer buffer, if the board or your computer has extra memory. A printer buffer allows you to quickly dump your file to be printed into the buffer memory, then go about your business as the Black Box sends the data to your printer; a real time saver! The Black Box will use either its own RAM (if you order the 64K version), or the 130XE extended memory banks; its all controlled by the configuration menu.

The Hard Disk port is the real reason for the design of the Black Box. You may connect most any hard disk controller that is SASI or SCSI compatible, or drives with embedded SCSI controllers. It is totally compatible with the current versions of MYDOS and SpartaDOS (which both have a limit of 16 megabytes per logical drive), but a newer version of MYDOS is provided that is capable of 48 megs per drive. Combine

that with nine drives, and that's over 400 megs available at one time! The Black Box also provides a conversion toggle for drives capable of 512 byte sectors only. Many of the embedded drives have this limitation, and previously were unusable. The Black Box splits each 512 byte sector into two 256 byte sectors, so your DOS will still only see what it requires. Another advantage is storage space. Many drives/controllers will give you more storage when using 512 byte sectors, some as much as 15% more! Currently, format software for the Black Box supports the following drives/controllers: Adaptec 4000A and 4070, Xebec S1410, Western Digital 1002SHD, OMTI 352x controllers, and all Maxtor and Seagate embedded SCSI drives. A partition is defined as a part of the hard disk which is seen by the computer as a separate disk drive. Since many hard disks are very large, it is useful to create several partitions of the drive, instead of one single drive, as your DOS sees it. The Black Box goes one step further in not only letting you define the partition for each of your 9 available drives, but allows you to have a list of up to 96 partitions, with names! Since a partition can be very small, you can make up several small partitions of 720 sectors (the same length as a standard floppy disk), and sector-copy any of your non-protected programs to these partitions. Now you can swap that partition in as drive 1, and boot your program at hard disk speed!

The configuration menu is the 'heart' of the Black Box. You can enter the menu from anywhere you are by simply pressing one of the buttons on the board. You may now edit the hard disk configuration, exchange drive numbers, enable/disable the modem and printer ports, or go into the 6502 monitor. After you are finished, pressing ESCAPE will put you right back into the program you were using! No memory or screen display is destroyed by using the menu!

The 6502 monitor is very handy for machine language programmers. How often have you wondered where your program was, or what caused an apparent 'lock-up'? Entering the monitor will show you all the processor registers, and display the disassembly of the instruction it was about to execute when you entered pressed the button. Users of MAC/65's DDT will feel right at home with the monitor's use.

The Black Box has other 'goodies' in it. Any communication with your floppy drive will be in high speed if you are using a XF-551, a modified 1050, or a

happy 810. This will work with just about ANY DOS or utility!

A text or graphics printer dump of your current screen may be done at any time by pressing one of the buttons on the Black Box. (The graphics dump is only available for dot-matrix printers capable of graphics.) You may write-protect ALL of your hard disks by flipping another switch on the board. This can be a real life-saver when running a new piece of software. The Black Box provides disk I/O tones with separate pitches for disk reads and writes to your hard disk, so you can hear what's going on! This option may be disabled within the configuration menu.

The Black Box also provides support for users who have used a MIO previously to store data on a hard disk.

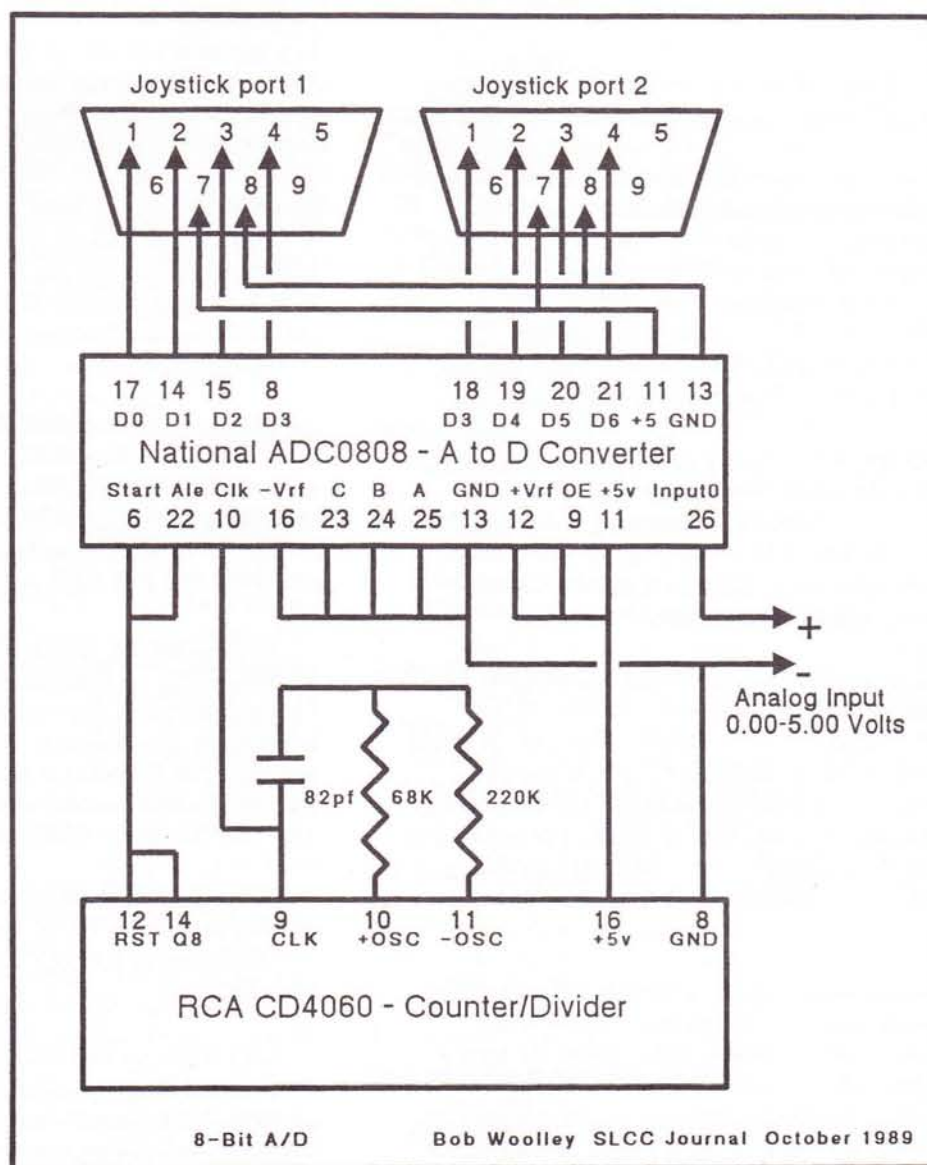
The MIO actually stores data inverted, but by setting a dip switch, a previous MIO user will now be able to access all the data on his drive with the Black Box, with a small sacrifice of speed.

If you have any more questions, please feel free to call. User group and dealer discounts are available. The retail price of the Black Box with no buffer ram is \$199.95, and with 64K, \$249.95.

Computer Software Services
P.O. Box 17660
Rochester, NY 14617
(716) 586-5545

Here is a little A/D converter that plugs into the joystick ports of any Atari 8-bit. It takes about 1000 samples per second at .2% resolution (8 bits) and needs no power supply of it's own. Unlike the imprecise POT function used in your computer, this circuit reads voltage, not resistance, and is very (.2%) linear. The input range is 0 to +5 volts in a series of 256 equal steps. Costs maybe a couple of bucks - works nice. Just PEEK(54016) for a continuous readout. A guy could make a real nice scanner with one of these.....

Bob Woolley SLCC



8-Bit Beginner Boogie

Some tidbits that will be of particular interest to new users...

by Dave Morel SLCC

At the last meeting I overheard a new 8-bit user ask Bob Woolley a bunch of questions, and two things happened. One is I remembered how lost I was when I first started to compute. The other is I realized that with so many people switching to 16-bit Ataris, there are a lot of you first time users out there with brand new secondhand XLs and XEs and no idea what to do with them.

I've never figured out what to do with mine, either, but I have picked up on a few things that might help you.

The first thing to learn is that all books and manuals for computers or peripherals contain one or more errors and a quart of confusion. This is a requirement of federal law and is not, so far as is known, a part of a larger communist conspiracy. What this means, in effect, is that if you did what the book said and whatever you're trying to make work doesn't, you are probably not at fault. Feel better already, don't you?

A computer works mainly by magic, and part of the magic is in instructions that tell it what to do. These instructions are in memory locations, or addresses, somewhere off in the fifth dimension. If you want to, you can look into these addresses and even change what's there. This is done by using PEEKs and POKES.

To look at an address you tell the computer to ? PEEK(address). If you told your computer to, for instance, ? PEEK(712), it would return a zero. It would do this because that's what's there. If you want to change what's in an address you POKEaddress,number. As an example, you could POKE712,24. I'm willing to wait if you'd like to turn on your Atari and try it. Tum-te-tum-tum.... Go ahead, I've got nothing better to do....

Surprised at what happened to your screen border? The color changed because 712 is the location that controls the border. Location 710 controls the screen itself. If you'd like to experiment for awhile by POKEing those locations with even numbers from 0 to 254, I'll wait some more. Really, I have nothing better

to do....

Back already? In case you're wondering (and it's a little late, now, Bunky), no POKE will hurt your computer and none are permanent. You can restore the defaults at any time by pressing RESET or by turning your Atari off and on. Another solution is to use a PEEK to place the default into a variable. Later you can POKE that variable into the address again.

Now that you're an expert at PEEKing and POKEing, let's see what else we can do with these commands. One neat thing we can do is turn off the screen during long math programs. Why? Because if the computer doesn't have to put time into refreshing the screen it can put that time into counting its fingers and toes and go about 30% faster, thass why. To do this, POKE559,0. Turn the screen back on with a POKE559,34 (If you're using OSS BASIC XL the END command will also work). Be sure to add a TRAP to your program if you cut off the screen, because otherwise you'll have no way of knowing if an error occurs and the program aborts.

While on the subject of screens, ever notice that if you haven't hit a key for seven to nine minutes your screen starts changing colors? The location for the timer/flag is 77. POKE77,128 to start the color changes. To stop it from happening, write your program so it POKES a 0 in there every once in awhile.

Want to use the consol keys? All you gotta do is PEEK(53279). A 0 means all are pressed, 1 = Option-Select, 2 = Option-Start, 3 = Option, 4 = Select-Start, 5 = Select, 6 = Start, and 7 = none pressed. The Help key is at address 732. A 17 means the key has been pressed alone, 81 = Help-Shift, and 145 = CTRL-Shift. POKE a 0 to clear it.

If you get distracted by the cursor flickering when printing to the screen, you can cut it off by POKEing a non-zero number to 752. POKE a 0 to turn the cursor back on.

Let's take a quick break from PEEKs and POKES and do something else. If you haven't yet, you soon will discover that the question mark after an INPUT command isn't always appropriate. It's easy to get rid

of, and this example shows how:

```
10 ?"Insert Answer ";INPUT #16,A$
```

The way this works is the ghost of Elvis vaporizes the question mark, using psychic powers bestowed on him by the Mystic Seer of Planet X. That's my understanding, anyway.

Ever need to have a string filled with something repetitious? Here's an easy way to do it:

```
10 DIM A$(100): A$="X": A$(100)=A$: A$(2)=A$
```

That's all there is to it. You don't need to fill up the whole string, either, just make the start and end where you like. And, as an added bonus, the string you are propagating can be more than one character long. Yes, that's right, teeny elves live inside your computer and run their little legs off putting your strings together. Thank you for asking.

Here's another time saver. Your mother probably never told you this, but (1)many Atari BASIC keywords can be abbreviated, and (2)Atari BASIC isn't (usually) all that fussy about spaces. As an example, let's compare two lines:

```
10 FOR X = 1 TO 20: PRINT "Whee": NEXT X:  
PRINT "What": INPUT A$: GOTO 100
```

```
10F.X=1TO20:?"Whee":N.X:?"What":I.A$:G.100
```

The first line is 74 characters long, while the second is only 42. Admittedly the example is a little contrived, but there'll come a time when you'll write strange lines, too. And, yes, the second line is harder to read than the first. But as soon as you LIST your program to screen BASIC will obligingly spell out the abbreviations and add spaces. Life just got sweeter, didn't it?

Personally, I like the sound of the keyboard when I type, but some don't. If you're one of those, cut that sucker off with a POKE731,1. Is the keyboard too slow for you? Address 729 controls the time elapsed before a key will repeat, and address 730 controls the rate of repeat. Give them a PEEK and replace the values as you see fit.

Frustrated because your Atari gives you a hard time when you try to print a quotation mark in a program? Tell it to print a CHR\$(34) instead. That's the ATASCII code for the quote. You can take a look at all the ATASCII characters by making up a loop from 0 to 255 and running it through CHR\$(). Be sure to POKE766,0 first, or else the control characters will wind up doing their stuff rather than printing to the screen. And remember to POKE766,1 when you're done.

If you'd like to change your screen margins, address 82 controls the left (the default is 2) and address 83 controls the right (the default is 39).

If you've ever managed to duplicate a file name on a disk, you know what a big hassle that can be. Try to change one name and they both change. Try to erase one file and they both erase. If you're using DOS 2.5 and have the COM files, this problem is easy to fix. If you're not using DOS 2.5 or don't have the COM files, you still have a way out. Go to BASIC and POKE3118,0. Now go back to DOS and when you do a rename only the first file will change. This fix only works with a non-memory resident DOS, unfortunately. If your DOS is memory resident you're gonna have to get somebody to teach you how to use a sector editor.

Did you know you could copy files to the screen or printer from DOS? If you're using DOS 2.5 all you have to do is pick the COPY FILE command. When it asks "COPY--FROM, TO?", you just look it right in the eye and type "filename,E:" for screen or "filename,P:" for printer. You don't use the quotation marks, of course, and notice there is no space after the comma. If you're working with another DOS then use the appropriate COPY command for it. Be careful to only copy LISTed files to the printer or you're gonna wind up with a lot of wasted paper.

If you've ever wanted a quick way to randomize a variable array, then want no more. Watch closely:

```
110 REM Assume your array has 100 elements and is  
named A
```

```
120 FOR X = 0 TO 99
```

```
130 R = INT(RND(0)*100)
```

```
140 T = A(R): A(R) = A(X): A(X) = T
```

```
150 NEXT X
```

See, all done. That's pretty neat, and I wish I'd figured it out myself. Actually, I swiped the idea from a Commodore magazine. By the way, you did know that variable arrays start with zero, didn't you?

If you own an 800XL, I have some bad news for you. The built-in BASIC has a flaw that adds an extra 16 bytes to the end of any file that it SAVES and does so each time it SAVES that file. Try this on a junky disk:

```
10 ? FRE(0):SAVE "D:JUNK":RUN "D:JUNK"
```

The command ? FRE(0) shows how much memory you have available for programming. When you run the above program on an 800XL you'll watch that memory shrink 16 bytes at a time until your system crashes.

There are several things you can do about this. One is to only LIST your programs to disk. Another is to buy

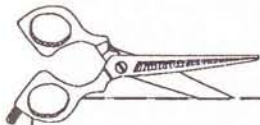
and use an Atari BASIC cartridge or an OSS BASIC XL cartridge. This last is a powerful cartridge and I highly recommend it.

You may have found that once in a while you'll buy a game disk and it won't work on your XL/XE. This could be because the disk is damaged, or you forgot to lock out BASIC, or something like that. Or it could be that the game was written for the 800 and won't work with the XL/XE Operating System. What's an Operating System? Um, er, ah, it's a system that operates, is what it is. Yes. Now that we have the technical stuff out of the way, let's get to solving your problem. What you need is a translator disk. This is a program on a disk that switches the XL/XE OS for the one used by the 800. Boot the translator before booting

your game. You can bum a copy from anybody who has one, or you can support the SLCC by buying one for a few bucks from the friendly SLCC disk librarian.

Well, that's it. I've pretty much run out of things to say, other than to caution you not to hit your new computer very hard with a hammer, as this may void the warranty. I'll cheerfully take credit and kudos for all that is good and warm and huggable in this article. All errors are the sole responsibility of my cat. Have fun.

PS: Deep down in your heart, don't you yearn to know what will happen if you POKE755,6?



Membership Application for San Leandro Computer Club

Yes, I would like to receive 12 months of the SLCC JOURNAL along with other membership benefits, including software discounts, training, technical assistance and much, much more, for one low, low price. Just fill out this application, and mail it with a check for \$20.00 (\$40.00 outside the US or Canada) to: SLCC, P.O. Box 1506, San Leandro, CA 94577-0374. Do it today and join in on the coming excitement.

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A Review of Spitting Image

By Bill Pike (PAC)

Review copy loaned by IB Computers

I was sitting down one evening in a generally foul mood and was sick and tired of the whole world. My generally foul mood was getting deeper so I decided to blow something up. Of course I went to my ,Friendly?, computer. I found something to cure my mood. It was a British game called "Spitting Image". If you like British Humor or "the colonies" TV show "D.C. Follies" or "The Muppet Show" you will love this game. It is destined to become a classic for the ST.

The game package says, "Barry Manilow Free". On the back of the package you will find that "This game is guaranteed to contain no reference to Barry Manilow (except this one)(and the one on the front). There is also a WARNING : DAMAGE saying "A good way to really damage your cassette or disk is to smear marmalade all over it or leave it overnight in a bucket of creosote."

Within the next seven years a world war will take place. a war so great that even the Swiss will get involved this time. A war so terrible the Italians have already surrendered. One leader will emerge from this war to rule the world. It is your task to stop this leader and SAVE THE WORLD.

This is the title screen, you are then shown a map of the world and the cursor will identify the various world areas for you. You will also be shown your antagonists: Grovey Gorby, His Holy Coolness, Ms. T, Ronald MacRegan, Mr. & Mr. Ayotollia, and President Botha who is a very nice man (Report compiled under the South African Reporting Restrictions). You will also be introduced to Her Royal Reffness who will judge all contests.

Pick your champion, pick their antagonist and have at it. You have to defeat all antagonists, totally discrediting them. You will then have to face the Prince in a real mud slinging contest. When you have successfully completed your task you will be shown who will rule the world.

You are told that the instructions are. "This is the most confusing bit. Ronnie got completely lost here and even Maggie took 5 seconds to understand it." Anyhow you also have a

"sidekick" to help you if you need him/her.

The cost of this game is \$37.95, why they don't just say \$38.00 I still don't know. I know the cost it a might high but the program is worth it. This is the best program I have seen in a long time, however I do enjoy Monty Python. The graphics are excellent and watch the background scenes for some surprises during the combat sequences. I spent about 3 hours playing the game when I first got the disk and this is a record for me. Even my 16 year old son liked it. My wife hated it, she thought it was silly, she also thinks I'm silly so take it for what it is worth.

P.S. If you get tired of playing against the computer you can also thrash your best buddy in a two player game. Ta! Ta!

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Update From Darryl May

I'm now a registered student at Colorado State University. I'm taking 18 credits this semester with classes in Calculus, Discrete Math, System Software, Physical Geology, Matrices and Linear Equations, and Computer Lab Activities in Calculus. It took me 21 hours to drive out here. I made it to Reno in 3 1/4 hours and to Salt Lake City in 14 hours. I rested (I forgot how to sleep so I really didn't get much rest) in Salt Lake City for 6 hours at a motel 6. Then off I went at 7am, headed into Wyoming. After many hours of driving through highway construction projects I finally reached Fort Collins at 2:30pm.

My roommate, Devin, from Alexandria, VA had a 30 hour road trip cut short in Ohio when he totaled his truck. He fell asleep at the wheel. Luckily, he was not hurt. Then, he had to catch a plane, set up a ride from the Denver airport and arrange for all his stuff to be shipped here. His insurance did cover the car but the plane ticket and the cost to ship his stuff did run over \$500. I think I spent \$80 total for gas, food, and lodging.

On a lighter note, I have completed two weeks of classes so far. As to Moran's note: the C stands for the C wing, the 3 in 320 stands for the 3rd floor, the 20 stands for the door number, Green Hall is one of the dorm buildings on campus, and the mail is delivered directly from the post office to each of the dorms so a street address is not needed.

In the October 1989 issue of MacUser magazine on page 51 there is an article about Atari's STacy portable ST computer detailing the use of STacy with Spectre GCR to create a "under \$2,500" laptop Macintosh that can read and write Mac disks and is faster than a Mac Plus!

Atari stock jumped up one full point on Friday September 8th to reach a new high of 10 7/8 (the stock finished 9-22 at 12 on continued high volume--Ed.).

Practical Solutions is getting ready to ship a cordless mouse compatible with all ST and MEGA computers. The cordless mouse uses an infrared signal allowing for use up to five feet away from its base receiver. The Cordless Mouse features a sleek lightweight contour design, allowing ease of use for both right and left handed people. Using an 8bit, 12 MHz CMOS CPU, the cordless mouse provides a high resolution of over 200 cpi and a tracking speed of up to 600 mm/sec. This makes it twice as fast as the Atari mouse and takes up less than half the rolling room normally required on your mouse pad. The mouse

uses an automatic shut off to extend the life of the 2 AAA batteries required to power the mouse. The mouse is scheduled to be released on October 20th at a suggest retail price of \$129.95. Mark Sloatman president of Practical Solutions said "Once you've used our mouse you'll never want to use any other. It's the fastest, smoothest mouse available today."

From Spectrum Holobyte comes this message:

First off, I want to thank all of those ST users who have supported us by buying FALCON. As of August 25, 1989, we have sold 12,962 units in North America. In addition, we have sold 1,640 FALCON Mission Disks (Operation: Counterstrike) since the beginning of the month. For the statisticians, total sales in August for ST FALCON were 202 units as compared to 836 for the Amiga, 1,151 for the IBM and 1,167 for the Mac version.

By the way, I have not been giving the ST users the "Silent Treatment" as you claim; it's just that some of us are trying to get new products out, such as the Mission Disk, and feel that this is the best way to support ST users.

The ST users who have bought our products have been wonderful. They have shown that there is a market for the ST in the United States, and they deserve the support of other software companies. Many have written to me or left messages on on-line services. ST users are fed up with piracy and have turned in a number of "pirate boards" to us. We, in turn, have turned these over to the Software Publishers Association (SPA). These boards should not be allowed to ruin the market for the rest of us.

While we were once again disappointed to see that the Mission Disk for FALCON (the Mirrorsoft version) appeared on the bulletin boards before we even released it here in the United States, we are not going to let it distract us from servicing honest ST users. As long as there is a market, we will support it.

It has never been our intent to slander the ST market but rather to help educate the user base about some of the frustrations of being a publisher, programmer or developer. You have helped us better understand some of the frustrations users must go through. We have taken off the disk-based copy protection on the Mission Disk and upgrade for ST FALCON as a way of saying "thanks for being honest." Thanks for all of the comments and letters. It has been an educational experience for all of us here at Sphere.

Sincerely, Gilman G. Louie CEO/Chairman
Sphere, Inc.P.S. Feel free to distribute as many copies of this letter as you see fit.

Connecting Point of America with more than 325 outlets has made a agreement with Commodore to warehouse, re-distribute and sell all Commodore Amiga and PC line hardware products.

In Dusseldorf, Germany Atari officially announced two new computers called the STE and TT. Atari had 4 "finished prototypes" of the TT on display. The Enhanced ST (STE) is a basic ST with a 4096 color palette, 4 joystick stick ports on the motherboard (now separate from the keyboard allowing for direct reading of the ports like the joystick ports on the Atari 800 computer), a new sound chip for digitized sound using 8bit stereo PCM(Pulse Coded Modulation) sound, SIMM memory from 1 to 4 megs, and hardware support for fine scrolling. The STE fits into a case like the 1040ST.

The following is a translation of a flyer about the TT which was being distributed at the Duesseldorf Atari Show in Germany. Dave Small had the flyer FAXed to him. Dave and I (D.A. Brumleve) have provided the translation. My translation is weakened by my suddenly-missing technical German-English dictionary, by Dave's limited understanding of the German as he was typing, and by my lack of knowledge of power computing. Even so, I'm pretty sure what I have translated below accurately reflects the flyer. There were a few phrases I've omitted (with " ... " instead), but, otherwise, it's here:

The Performance Power of a Workstation

The new ATARI TT Computer

Premiering at the Duesseldorf Atari Show, the TT with the Motorola MC 68030 processor moves the ST family up into a 32-bit machine and achieves four times the computing power with full compatibility with the customary TOS. The CPU MC 68030 is ... Memory Management Unit, instructions, and data cache are integrated on the chip. Next to it on the board is a socket for an optional coprocessor (MC 68881/MC 68882). The 2mb of memory storage are used alternately by both the video-logic and the rest of the system. The memory is expandable up to 8mb (and through the use of 4mb chips to as much as 26mb).

The 512kb-sized ROM was implemented with four 1mb chips. In addition to a parallel Centronics and two asynchronous serial ports, as well as MIDI-ports and the Atari ACSI-DMA port (for Atari hard disks, laser printers, or CD-ROM), the 32-bit machines have two SDCL high-speed ports (or one of these and a LAN); in addition to that an SCSI-interface is integrated over a (24-pin) Sub-D port in the TT, which of course also provides an internal loudspeaker and clock and a Mega/ST-compatible keyboard with ports for mouse and joystick.

The sound system has 8-bit PCM-stereo sound (Pulse Code Modulation). Video output is to either an

RGB- or monochrome-monitor, serving up a palette of 4096 colors. The color resolution ranges from 320 by 200 pixels to 320 times 480 with 256 colors up to 640 by 480 pixels with 16 colors shown at the same time.

Next comes the super-high-resolution monochrome mode with fabulous 1280 by 960 pixels with an unusual enhancement in the "duochrome" mode: 640 by 400 pixels resolution--that corresponds to the monochrome mode of the ST--but it's programmable in any two colors of one's choice.

A few hardware expansions for the TT on the foundation of the VME bus are currently being planned: a connection to Athernet-network, a terminal multiplexer, as well as graphics expansions. The workstation-like capability of the TT will be supported by an industry-standard operating system. UNIX System V will be ported to the TT. X windows will be available as well as a graphics port based on X windows, which offers the owner of a TT all of the advantages of UNIX without the frequently encountered difficulties.

Atari TT Computer Specifications at a Glance

Compatible with the ST, therefore with a large software library <* three additional graphic modes 320 X 480 pixels with 256 colors from a palette of 4096, 640 X 480 pixels with 16 colors from a palette of 4096, 1280 X 960 high resolution monochrome mode<* Motorola MC 68030 processor, 16 MHz<* DMA with built-in SCSI and ASCI ports<* Two serial ports, expandable to four ports<* parallel port<* detachable keyboard<* internal VME-socket (A 24, D 16)<* prepared for internal hard disk<* 8-bit-stereo PCM sound<* 2mb RAM, expandable to 8mb (26mb through the use of 4mb DRAM)<* free socket for math coprocessor (MC 68881/2)<* real-time clock <* network-capable hardware.

Allan Pratt from Atari talks about the TT.

Hmmm, the whole graphics capability question is really foggy so far. Here's some really straight scoop about the TT from inside Atari:

The video palette has *4* bits per gun for color values. That is, you have a total of 4096 colors: 16 levels each of red, green, and blue. (The ST has a palette of 512 colors: 8 levels for each gun.) Another "color" mode provides 256 levels of grey (actually green), for really fine reproduction of a black-and-white image. This is independent of the resolution: if you're in a 16-color mode, you can pick any 16 levels from the spectrum of 256. (We call this hyper-monochrome: one color, but a lot of it!)

There are *6* video modes: the three ST modes (totally compatible), plus 640x480 16-color, plus 320x480 *256* color, plus 1280x960 monochrome. ALL of these modes except the last can be shown on a single monitor. That monitor need not be multisync. It can be a slightly modified VGA monitor, or (of

(Cont. next page)

course) the monitor which Atari will sell for the TT. The last mode needs a Viking monitor or something similar. ST high rez (640 x 400 x 2 colors) is not limited to black and white: you can choose any two colors.

Question: Does this mean it has a "DMA" port like the 520/1040/Mega? Does it have a "real" SCSI port as well? What kind of throughput put can be expected from the hard disk interfaces? Can it do DMA and access 4Meg?

Answer: Yes, there is a DMA port like on the ST and Mega. Your hard disk will plug right in. You can connect a bootable SH204 and it will boot! There is also an external SCSI port. The SCSI port can access the full 32-bit address space; the ACSI port is limited to 24-bit addresses. The internal hard drive is connected to the SCSI bus.

Question: Is the VME slot the only way to expand it, or does it have a Mega compatible expansion connector as well?

Answer: There are a number of ways to expand the TT: you can add 2MB of dual-purpose (video and CPU) RAM, or 10MB when 4Mbit chips are available. You can add 4MB of REALLY FAST 32-bit nybble-mode RAM (not video-capable), and there's the VME bus.

The number 2MHz that's been bandied about needs some explanation: The CPU and memory clock speed is 16MHz. There are four clocks in a bus cycle. For dual-purpose RAM, around half the bus cycles go to the video or refresh. Therefore, the CPU gets around two million MEMORY ACCESSES per second, or 2MHz. There are other architectural details which make it a little faster than that. And remember, each access gets you 32 bits, not 16 as on the ST. Also, since the CPU is allocated half the bus cycles, it isn't ALWAYS postponed by video or refresh: it might try to access the bus just as its turn comes up, and not wait at all. Therefore dual-purpose memory accesses run at MORE THAN 2MHz.

"Fast" RAM does not have video taking up any of the cycles, so you don't have to wait for that. It takes 4 or 5 clocks (I think) to set up a fast-RAM access, but "nybble mode" means that the CPU fills its cache in "burst mode" at one cycle per subsequent access.

The VME logic introduces one wait state, so a VME bus access takes 5 clocks. (Your mileage may vary: VME cards vary widely in response time.) But, again, you won't be held off the bus by video. VME in the TT shown in Germany is A24/D16 (24 bits of address, 16 bits of data).

Question: Can programs load in fast RAM or dual-purpose RAM?

Answer: By a "loader option" the original poster means "load program off disk" not "load .o files into a .prg file." This is correct: there are flags in the PRG header which control the behavior of Pexec and Malloc. Most programs can run in fast RAM -- programs which change the screen base pointer and

some other things can't, though.

Question: RAM on the VME bus?

Answer: You *can* put memory on the VME bus. The performance penalty is not bad. TOS will recognize that memory and use it for programs if you set it up right.

Question: Does it have a Blitter?

Answer: No need for one. The reason for the Blitter is to remove instruction- fetch overhead from memory operations, and with the 68030 on-chip cache, the TT does just fine without it.

Please, people, remember that when you compare the TT with a NeXT machine, for instance, you're talking about roughly 4x the price! JT's motto is Power Without the Price, and we think we're giving you just that.

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Opinions expressed above do not necessarily reflect those of Atari Corp. or anyone else.

Allan Pratt, Atari Corp.

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To All Atari Owners:

Rainbow TOS (a.k.a TOS 1.4)

The Operating System Upgrade from Atari
Atari is proud to introduce Rainbow TOS, a new version of the ST/MEGA operating system. During the early stages of the development of Rainbow TOS, we actively gathered suggestions from our customers and incorporated many of these suggestions.

We have made many enhancements, including an easier to use GEM Desktop. Here are a few of the changes:

- Faster disk access.
- IBM compatible disk format from Desktop.
- Compatible with high resolution monitors.
- Automatically run GEM applications on boot-up!
- Soft-Reset available from keyboard.
- Revised File Selector.
- GEM Desktop supports "moving" of files.
- Folder renaming ability!
- Better memory management.
- Archive bit handling for Hard Drive backup.
- And many more!

We consider Rainbow TOS to be a major enhancement to ST and MEGA computers and recommend that every one of our customers upgrade. Rainbow TOS is available now through your local Atari dealer.

For additional information on Rainbow TOS please call our Technical Support Department at (408) 745-2004.

Rainbow TOS is available from, and only installable by, your local Atari Dealer!

Suggested Retail Price \$99.95 (parts only)

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Call (408) 745-2367 for an Atari Dealer near you.

Augie Ligori, V.P. and General Manager, Atari Corporation.



MORAN'S Minutes

**General Meeting
Sept. 5, 1989**

The meeting was not convened until 8:05 PM because it took that long for Jim Hood and myself to force our somewhat reluctant Vice President, Bob Woolley up to the microphone. (till tonight he hadn't realized he might actually have to chair a meeting.)

Roll Call of Officers: Present, Hood, Moran & Woolley. Absent, Sammons. (Rumor has it that he was suffering from an old, rarely seen ailment, Rubydublets of the bung hole.)

Bob started with a general discussion of the merits or demerits of sending old eight bit equipment to Users in Poland. With the information generated by this discussion it was decided to look into the legitimacies of the need of equipment in Poland, to make sure the equipment would actually get to Users and not some one individual. Bob will attempt to get further information for a future meeting.

There is a rumor about an upgraded 130 XE from ATARI that seems to be more than a rumor. Maybe better late than never! The 8 Bit floppy this month contains a music demo and DRAW 7 a drawing program that comes with documentation on the disk. It was noted that due to the size of this program it was on an extended density disk.

The guest speaker of the night was Robert Brodie the new User Group Representative from ATARI. Bob took over the job from Chris Roberts who left ATARI after 6 weeks. (That's also a new record. Isn't it?) We received a brief review of what is going on at ATARI and a lengthy question and answer period that covered everything for everybody. Bob seems to be a breath of fresh air where it is badly needed. He is or was an Officer in a southern California User Group so he brings to this job knowledge that most representatives from ATARI haven't had.

Being no further business the meeting was adjourned shortly after 10 PM.

Respectfully Submitted - Jim Moran - Secretary



Dying to hook up a MIDI ?
Here's your chance to get some really great sound -

For Sale: Casio CZ-1000 synthesizer with full size keyboard. Has internal memory and ram cartridge memory for tones (16 preset and 16 programmable). Manual and original packing, all for \$185 or best offer. Frank or Jennie 536-7431



For Sale
SH204 Hard Disk Drive
\$350.00
Steven (415) 533-5333

MICROWORLD

GAMES

Bloodwych! Game of Month
Millenium 2.2
Pacland
Pacmania
Hostages
Populous
Populous Other Worlds
Falcon Scenery Disks
Hewson 4-Pack w/Nebulous
Alien Syndrome
Rocket Ranger
Chrono Quest
Sex Vixens from Outer Space

MUSIC

Notater
Creator
Mastertracks Professional
Dr. T's
Hybrid Arts
Realtime
Steinberg Pro-24 and Cubase
Midi Recording Studio
Music Studio
Music Construction Set

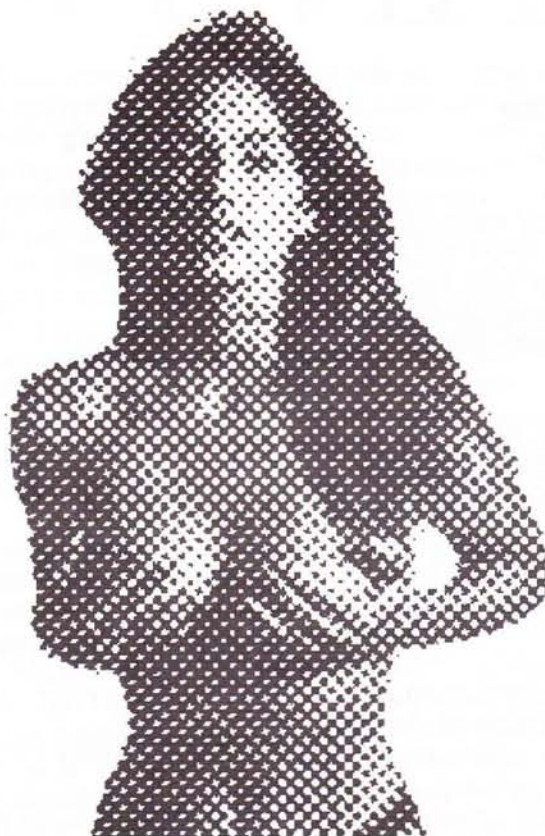
CADD

BeckerCAD
CAD-3D
Drafix 1
Athena II

You'll never see more games and application software for the ST than we have at MICROWORLD. Our dedication to the ST is obvious, and we invite the oldest and biggest Atari User Group, SLCC, to come see us and take advantage of your:

20-40%
Discount

MEGA 4 LASER SYSTEM



**PACKED WITH
FEATURES AT
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ATARI RULES!

APPLICATIONS

Calamus
Fleet Street with Ultrascript
Publisher ST
Pagestream
Publishing Partner
Signum II
Protext
WordUp
WordPerfect (New Version)
Microsoft Write
1st Word Plus
Regent Word II (good for 520)
Tempus II *It is FAST!*

PROGRAMMING

Mark Williams "C"
Hisoft "C" Interpreter
Forth MT
Megamax Laser "C"
Prospero Fortran
Prospero "C"
GFA Basic 3.0 and Compiler!
STOS
STAC
Talespin

DATABASE

DBMan 5.0
Superbase 1, 2, and 3
DataManager and DM Profess.
DataTrieve by Abacus

These are a sampling of some of the 1800 products we have on our shelves. Come and see us, the oldest and best Atari center for all your Atari ST needs. We won't be undersold and we need your support just like you need a good support center.

1514 University Ave.
at Sacramento
Berkeley, Ca.
548-8999



October 1989

SLCC CALENDAR OF EVENTS

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3 Main Meeting 8:00 San Leandro Library	4	5	6	7
8	9 ST Sig 8:00 San Leandro Library	10 Telecomm SIG 8PM	11	12 Business SIG 8PM	13	14
15	16	17	18 ST Beginners SIG 7:30PM	19	20	21
22	23	24	25	26	27 JOURNAL DEADLINE	28
29	30	31 				

Now That It's Plugged In.....

The SLCC has two SIGs (Special Interest Groups) designed to introduce members to the operation of their Atari computers. System set-up, DOS, keyboard functions, and other introductory material are discussed. The ST group meets on the fourth Wednesday of every month, while the 8-bit sessions are scheduled on an as-required basis. Contact the appropriate SIG leader for information and directions.

Sig leaders and their phone numbers are located on page 3.

October ST Disk of the Month

Features:

Hypnosis Program---This program helps you induce a mild state of Self-Hypnosis for the purpose of dealing with stress and promoting relaxation (color only)

Molly II Program---This is a fun to watch graphics demo (color only).

By the way, Ken Henton, our 16-Bit Disk Librarian and Software Chairmain, would like to know if these two programs could be integrated. Molly II presents a visual effect that would seem to be appropriate to the Hypnosis Program.

Stocks Program and Wallstreet---These are both stock market related lightweight instructors on how to buy and sell.

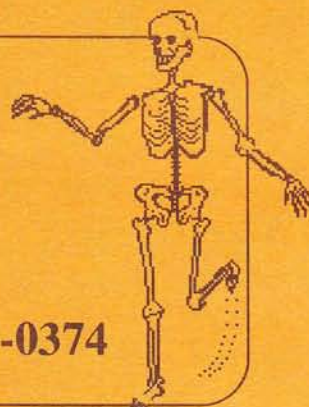
These items and a whole lot more are available at the next meeting. Plus, check out the new graphic catalog Ken has created. This is a hard copy collection of all of the graphics available on our club disks. Check this out, very professional!

More Magic from Ken



SLCC

JOURNAL



P.O. Box 1506 San Leandro, CA 94577-0374

**Next Meeting:
October 3, 1989
8:00 PM**

**San Leandro
Community Library**

FIRST CLASS MAIL