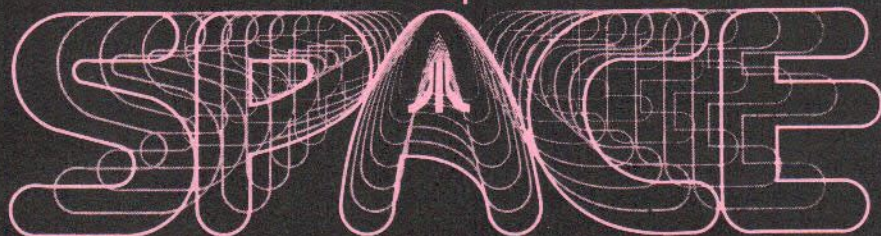


APRIL • 1989

Saint Paul ATARI Computer Enthusiasts



An independent computer user group

SPACE Meeting Friday, Apr 14th at 7:30pm

MAST Meeting Friday, Apr 21st at 7:30pm

At the Falcon Heights Community Center
2077 Larpenteur Avenue West

MAST+ Programmers Meeting
Monday, Apr 24th at 7:30pm

At First Minnesota Bank Building - second floor
Lexington and Larpenteur, in back of building



Minnesota
Atari ST

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SPACE/MAST BULLETIN BOARDS**SPACE/MAST East (XE) - BBS Phone: (612)-774-0135**

Sysop: Bruce Haug (Home Phone: 774-6226)

SPACE/MAST West (ST) - BBS Phone: (612)-560-9254

Sysop: Steve Pauley (Home Phone: 560-2917)

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NEWSLETTER ADVERTISING RATES:

1/2 page - 4" vertically x 5 1/8" horizontally - \$ 15/mo., \$140/yr.
Full page - 8" vertically X 5 1/8" horizontally - \$25/mo., \$240/yr.
Club members classified - 50¢ per 40 characters, \$2.50 minimum per ad.
Send to : SPACE/MAST, P.O. Box 12016, New Brighton, MN 55112



S • P • A • C • E

**Bytes from the Pres**

By Greg Howell

Seeing that nothing much has been happening lately, I thought this month I'd give you a taste of my favorite Vagon poet*.

"Oh freddled gruntbuggly thy micturations are to me
As plurdled gabbleblotchits on a lurgid bee.

Groop I implore thee my foonting turlingdromes

And hooptiously drangle me with crinkly bindlewurdles
Or I will rend thee in the gobberwarts with my blurglecruncheon, see if I don't!"

I hope you enjoyed this intellectual taster treat! See you at this month's meeting.

* Ed.: see Douglas Adam's Hitchhikers Guide to the Galaxy for more on Vagon poetry.



M • A • S • T

**News from the Pres**

By Jim Schulz

Well, spring is upon us again and it's time to check out what's new at MAST this month. First up, last month, then this month, and finally the future.

First up, March.... The March meeting was a little bit strange. In addition to losing a number of members to the St. Pats day partying, we also had one of the last snow storms of the year. Strange as it seems, the new members of our group made it to the meeting and many of our old reliables couldn't find their way there for one reason or another. All in all, though, we had a good meeting. I would like to thank my chief bottle washer, Dave Meile for holding down the fort while I made it through the storm and a nasty accident as well.

This month.... For the April meeting, we will again hold a standard meeting with news, rumors, demos, questions and answers as well. And, of course, we will have DOMs as well. Demos this month will include Spacecutter, STOS, and Zany Golf. Also we will discuss more about a new MIDI sig which got a good response from the first discussion at the meeting. A number of new products are slated for release this month as well so come for the latest news on these as well. I also hope to get the old 8 bit emulator humming as well. After bringing my 8 bit drive to the last two meetings, maybe this month we can show what it and the ST can do together.

So what's coming in the months to come???? Things are a little hazy for the months to come, but I am working on a meeting on desktop publishing as well as the ST emulators which are all coming out with new versions in the next few months as well. I am also looking into a MIDI demo as well if we can find someone to put it together.

Also, don't forget the MAST+ meeting

the Monday this month following the MAST meeting with the Dale, Chuck, John, Dave and Todd as well. After last month's rather large group, I don't know what to expect this month. If you have a programming question or problem, this is the place to get it answered. Nothing has been planned yet for this month's meeting, but in the works are demos of Hisoft's new resource editor as well as the new Hisoft Basic Professional as well. And stay around afterward for pizza as well. You don't have to be a programmer to enjoy the MAST+ meeting.

Other stuff.... As I mentioned earlier, the idea of a MIDI subgroup was brought up again at the meeting. This time, there was quite a bit of interest. Now we need a volunteer with an interest in MIDI to run the group and organize a time and meeting place. If you have any ideas about this group or are willing to help, please see Eric Hopper at the meeting.

Things are really starting to hop lately at MAST. With the loads of new members and new ST owners in January and February as well as new owners to come based on Atari's new sales and advertising campaign, we are now getting a number of first time computer owners and new ST owners with a number of questions. I have talked with some of these owners on the phone and there is only so much that one can do without the one to one type contact. What I would like to propose is a new subgroup for new "information." This is for old and new users alike who want to learn more about their ST. Initially, we will be aiming at answering and getting our new members up to speed, but we

also talk about topics of interest to all as well in an extended form. Topics which could be discussed are ramdisks, print spoolers, modems and how to use them, hard drives, utilities, and more. The ST as well as being very user friendly can also be user unfriendly at times to a new user and old user alike. I brought this idea up a year ago and got very little response at all. If you are interested in this, please see me at the next meeting.

Volunteers.... MAST always needs help. We have a number of very easy, but needed jobs waiting to be done. If you are willing to help, please see me at the next meeting.

Well, I again got another shipment of 300 disks in for this month. This time, they are blue. The disks are again \$0.90 each for a double-sided disks. I also have over-the-top disk labels for \$2.00 per 100 as well. A number of projects are in the works. I am trying to keep MAST growing as well as alive. If there is something that you would like to see at MAST, please let Dave or I know and we will look into it.

Finally, don't forget to check the MAST BBS weekly for the latest ST News from ST Report, and STZMAG. I got quite a bit behind on these, but we should be up to date by the time you read this. Also, ST Reports, STZMAGs, and the new Magazine Index are available each month in the MAST DOM library. For \$2.00 for the first disk and \$3.00 for two disks, you can't get a better deal on the latest ST news of the month.

Well, that's about it for April. If things are kept a little short this month, it's

because I have been rather tied up at work. My company has been trying for the last two months to get our new software release out the door and I am rather involved with both the finalizing of the release and its shipping. Hopefully, this should be cleaned up by the end of the month so I can spend more time at home with my ST than at work. Well, because the envelope has been busy this month, it again looks pretty empty. The envelope will hopefully return in a full state next month so stay tuned..... I hope to see you all this month for another exciting MAST meeting and MAST+ meeting.

[Ed. - The following two articles appeared in ST *MAGAZINE, issue #14]



APRIL FOOL'S ON GENIE

Reprint Ctsy GENie ST RT

(Editors Note: The following articles are HUMOR related and show not be taken as fact. They are NOT fact!)

ATARI ANNOUNCES SWEEPING REORGANIZATION; 8-BIT COMPUTER LINES AND HOME VIDEO GAMES SOLD TO COLECO; NEW HIGH END WORKSTATIONS ANNOUNCED; HEADQUARTERS MOVES TO GERMANY

Sunnyvale, CA, UPI, 1 April 89: Atari Corporation, an American Exchange corporation, announced today a sweeping reorganization plan designed to focus the company on its successful product lines and make it more competitive globally.

The first step in this new program

involves the sale of its 10-year-old line of 6502-based computers, now known as the XE series, to Coleco. Also sold were the home video game lines consisting of the 2600, 7800, and XE game system. Coleco, whose last venture into this marketplace was the Coleco Adam, a widely praised design plagued by engineering difficulties, and the Colecovision game system. Purchase terms were not disclosed, but Atari was believed to have received in excess of fifty thousand dollars in cash and warrants.

Atari took the industry by surprise by announcing a new workstation product based on technology first utilized in the company's ST computer line. The workstation, based on the Sun Microsystems SPARC processor, uses Atari proprietary custom chips to handle graphics. It also uses the Immos transputer chips to improve processing power. This new system, termed "revolutionary" by company president Sam Tramiel, can achieve processing speeds in the range of 100 times the speed of an IBM PS/2 model 70, at about the same retail price. While its primary operating system is the same as in the Atari ST computers, sophisticated emulation packages were announced by third parties, allowing it to use MSDOS, OS/2, and Macintosh software packages. Despite the software emulation method, the raw processing speed of this system allows it to actually outperform IBM PC's and Macintosh's.

The new system, dubbed the Atari FU (for Floating-point Ultimate), is perceived by industry observers as a potential NeXT-killer. It features:

- o Graphics resolution of 2048 x 1600 pixels with 16 trillion colors. The monitor uses LCD-shutter technology described as "3-D capable".

- o Internal magneto-optical drive with multiple platter changer, total storage of 5 gigabytes online

- o Interface ports for Ethernet, Appletalk, 2 serial (up to 128 Kbaud), 2 parallel, optical mouse, digital quadrophonic sound, and X-10 controller

Despite the Atari's history of pre-announcing products, this system was shown in final form to reporters, and was reported to have arrived in computer dealer showrooms throughout North America and Europe in time for this announcement. U.S. list price on a standard system, including monitor, laser printer, and 8 megabytes of RAM memory, is \$9999.95.

In a less surprising announcement, Atari announced plans to move its corporate headquarters to Braunschweig, West Germany. It's U.S. operation will continue to be headed by Senior Executive Vice President Sig Hartmann, himself a German immigrant. According to Chairman and CEO Jack Tramiel, "We found that with our headquarters in the U.S., our European operations had achieved their full potential. By moving my corporate managers to Germany, we hope to allow the North American operation to do the same. By 1990, we plan to be the dominant computer company in the U.S.A., the way we are in countries such as Luxembourg today."

Wall Street reacted overwhelmingly to these announcements. Atari's stock closed at 29 1/8, up over 20 points; Apple dropped 5 to 34 3/4, IBM dropped 11 1/8 to 99 1/4, and Coleco dropped 3 to 2 1/2. closed at 29 1/8, up over 20 points; Apple dropped 5 to 34 3/4, IBM drop



CAUTION, READ CAREFULLY

by Leo Sells

Reprint Ctsy: Great Lakes Atari Digest

That's good advice. Especially these days for Atari owners hungry for news, information, and events. It's become painfully obvious how careful we all must be these days. You know, it's not unusual to see a product announcement in one publication and a denial in another. Sometimes it's hard to know who or what to believe.

That's the reason for this article. Read carefully. It's not my intention to point fingers or identify information sources that are either reliable or unreliable. No, I merely want to remind you that it's important for you to note it yourself.

Perhaps you don't realize it, but there is more than one source for Atari information out there - and some of them have interests other than accuracy and information. Don't take every announcement or rumor as the gospel truth. Check it out. See if it is verified in other publications. You know, the power of the press is great, but it is the reader's responsibility to question and check the accuracy of the news and information.

GLAD participates with Z-Net, a national Atari newsletter supplement. As President of one of GLAD's participating clubs, it's my responsibility to watch that accuracy, fairness, and a positive tone always be contained therein. If not, the club would have to reconsider its involvement.

I urge you to hold up some similar yardstick to any sources of Atari information you use. Is the source fair? Is it accurate? Is it positive as possible? Does it accept other views as well as its own? You get the drift. See if the source measures up to your expectations as a reader. If it doesn't, then drop it. There's plenty of other places to get information from.

But please be careful. More than one publication, online or printed, has different standards than I care for. One national magazine for instance will not print anything negative about Atari. Now being positive is one thing, but it's important not turn a blind eye to faults either. Other magazines seem to be mostly program listings and not much information.

Online sources are even more volatile. With BBS's being faceless, if not anonymous, you sometimes see incredible statements. Same caution is important on the national services. There are online news publications that are reprinted all over the country; their statements taken as gospel. Anyone out there watching for accuracy?

You know there are a large variety of sources for non-Atari news. Newspapers, radio, television. And all of them kind of balance and check the other. We all know the difference between

reading an Associated Press story, and reading something out of the National Enquirer. Sure, the latter is fun, but is it really accurate? Should you believe whatever they print?

The Atari community is infinitesimal compared to society at large. And there really is very little balance between sources of information. That's why it's important for you the reader to have some measure and to use it.

Read carefully. Have high standards. Choose your sources for Atari news carefully. And enjoy.



Minutes of the SPACE Meeting

by Larry Vanden Plas

1. The meeting was called to order March 10, 1989 by President Greg Howell.
2. The minutes were approved.
3. Bob Siede reported that he had received six renewals that night.
4. David Cole, the vice-president reported that we had received a user group newsletter from Florida, the Pacesetter.
5. Greg reported that Computer Access will give us a listing.
6. Bruce Haug reported that there have been no problems with the BBS since getting the new software running over three weeks ago. The one problem he did have initially turned out to be a problem with a cheap phone.

Some people have problems with download because they don't understand the three methods of transmission, standard, X and Y. Most of the BBS users indicated an interest in having Z-mag's available for downloading.

7. Offers and Deals: Asset Recovery Corp, computer and related surplus at low prices, on the north side of Charles Ave between Fairview and Pryor, Charles is one block north of University.

COMB had a number of small dot matrix printers for \$100. Watch for type of interface connection. If it is serial, identify whether it is for data transmission equipment (DTE) or Data Communication Equipment (DCE).

Software Botique is selling 2 disks for \$3, 3 games per disk. Some have very good text and graphics.

Sears at Brookdale had some equipment - cheap - water and smoke damaged.

The Computer Station was selling Ultimate Reality, an XE game cartridge for \$10 to \$11 off.

A book called "RS232 Made Easy" contains a number of charts, info on the 850 and many types of printers. The author is Martin D. Sayer.

Jim Johnson has the upgrade for the Sparta DOS cartridge.

8. Old Business: The North Suburban Center for the Arts has an Atari system. They wanted to print labels. A 1025 can be had for \$50.

9. One of the members indicated that there is a need for articles in the newsletter on using the BBS and DOM's.

10. The meeting ended with a demonstration of programs on the Disk of the Month (DOM). They included ARC 2.4 and UNARC 2.4.



Last Nite

by Dave Cole

Will the Atari 8-bit become obsolete in the future? This is one of the more important issues in our society. First of all, lets hope that the 8-bit doesn't become obsolete and die. Second, I hope that Jack Tramiel (Pres. of Atari) doesn't sell the STGS. If he does, probably the production of the XEGS (and the games for it) will soon cease to exist. And from there, he might decide to "exterminate" the 8-bit line forever. Scary isn't it? Let's hope that it isn't true.

There is a new company coming out. It's called "Lasersoft". The company has its own programmers, who create programs (what else would they do?) and sell them. If this company works out in the nearest future, the company may go into mail order and sell nationwide. The President, Nathan Block, if he does this, would probably put an ad into the "Antic" magazine. The decisions are up to him, so I won't assume on what the company will do next.

And since a stitch in time saves nine, if Atari does murder the 8-bit line, if we keep support up, and everything else, we won't have to worry about the 8-bit dying for some time.



It's my party...

by David Meile

Hello all Atari ST fans. This month I'd like to let you know that there will be a MIDI demo at the April MAST meeting. I'll be bringing along a demo version of EZ Score Plus and EZ Tracks Plus. Since I have a Casio CZ-230S, I'll be bringing that as well. You can get a chance to see a working demo (and, if you happen to have a disk or two at the meeting, you can take a copy of the demo home to play around with as well...)

Hopefully Eric will have some info on getting together on a separate evening for an all-MIDI interest group meeting. Be ready to let us know when you'd like to have such a meeting (and where).



SPACE 8 BIT SOFTWARE LIBRARY NEWS

April, 1989

by Joe Danko, Disk Librarian

DOM contents:

SIDE A

DOS	SYS 037
DUP	SYS 042
AUTORUN	SYS 001
MENU	039
SPACE	DOC 002
BAKTRAK	COM 116
FLIES	COM 058
PIRATES	COM 111
RAILKING	DOC 093
RAILKING	COM 176
HELP	DOC 030

This month side A is 100% machine language games. The source of this collection of software is NWPAC, the NorthWest Phoenix Atari Club. The disk librarian contacted me some time ago requesting TurboBasic and some ANALOG disks they didn't have. In return, we recieved a listing of their library, a disk of documentation and a 2-sided machine language game disk. Unfortunately about half the games were from past ANALOG issues so they are not included.

BAKTRAK.COM

This is a PAC-MAN type of dot-gobbling game that requires a joy-stick but the catch is that you have to return your player to his starting point to clear to the next screen. Hint: watch out for the object that floats randomly about the screen, it causes the loss of 100 points if you touch it.

FLIES.COM

Revenge Of The Plutonian Flies is a maze shooting game that speeds up as you progress. Don't touch the maze walls or you get zapped and the same for the flies. Use a joystick.

PIRATES.COM

Pirate Skulls requires two players using two joysticks at the same time to moves several layers of holes from side to side to get the greater number of skulls to fall to the bottom of the screen.

RAILKING.COM

RAILKING.DOC

A railroad network and economic empire simulation game to played between multiple players or against the computer.

SIDE B of the April DOM consists of my latest efforts at cataloging the SPACE software library. I have further debugged and 'improved' the catalog

program, brought the DOM titles up to date and added a catalog of the EXTRA disks. The EXTRA titles are releases of software that are not on monthly format disks. They span subjects from music and pictures to self-booting application programs and hardware projects.

Disks of the Month are cataloged by date, category and file name in two large files, PROGINDEX.M87 and PROGINDEX.M89. M87 includes all DOM's from July, 1982 through December, 1987. M89 includes all DOM's from January, 1988 through April, 1989.

SPECIAL disks are cataloged by disk number, category and disk name in the PROGINDEX.S01 file.

DOS	SYS 037
DUP	SYS 042
AUTORUN	SYS 001
DISKLIB3	BAS 121
PROGINDEX	M87 106
PROGINDEX	M88 052
DISKLIB3	LST 150
PROGINDEX	X01 121
PROGINDEX	M89 052
095 FREE SECTORS	

When DISKLIB3.BAS runs the first thing it wants you to do is to enter the current date. After that just follow the menu.

Each catalog file is named PROG-INDEX with a variable extender. The SPACE library will use the convention of Myy for DOM disks where 'yy' is the last two digits of the year the file was created. The other convention is Xxx for SPACE 'extra' disks where 'xx' is a number greater than 00.



MAST Disks of the Month

By Jim Schulz

Well, it's MAST disk time again. I am just a little busy this month so I haven't had much of a chance to scour the BBSs yet for the best in public domain. So again this month, things are going to be short....

First some news and then this month's disks. **Doc Disks....** When things settle out later this month, this is the first thing on my list. Then the scanning begins.... **Prices....** All MAST disks are again \$6.00. All updates are \$2.00 each with the original disk. ST News disks and doc disks are \$2.00.

I still have a number of backorders to fill from February's birthday blowout. Most, if not all of them, are done. All that is left is the shipping. This is tops on the list after the newsletter is done so expect your disks in the next week. I am sorry for any inconvenience that this has caused. **Online mags....** Last month, the ST Report disk and the STZMAG disk sold fairly well so they will again return this month. For \$2.00 for one disk or \$3.00 for two disks, you get the equivalent of two magazines a month for \$3.00 and you get two disks as well. If there is interest, we can add the ZMAG magazines as well. If you want news, reviews, and rumors, this is where to look.

Well, now let's take a quick look at some of the new programs for April. VT100 emulator desk accessory, this originally only worked in color and now is available in monochrome as well. Dcopy, the best disk utility program just

Articles due by April 30 !

keeps getting better and now includes a GEM shell as well. Opus, if you remember the Opus spreadsheet from ANALOG, well, this is the new version. I haven't had a chance to give it a good look, but it does have a full sheet of new features. If you are looking for a good spreadsheet program, this deserves a look. Superboot 5.5, this is the best known of the bootup configure progra also has a new version. Sticker3 label program, this is a full disk label program from Germany which load and save capabilities, but more important is that it allows you to use Print Shop-like icons on your labels as well. This program is for the large over-the-top labels, but it is the best of the program-around. Breakout-like game, if you like Breakout, you will love this new version of the old classic which lets you break down Atari's computer foes. Zoltar, this is a Galaxian-type game created with the new STOS game generator program. If you always wanted Galaxian for the ST, well, it had arrived. Finally, I have obtained the complete Bible on disk as well as viewing program. I am thinking about placing this on disk, but I need to know if anyone is interested. Please note that this is going to be big, but a package price will be available on all disks. Also, don't forget this month's ANALOG disk as well.

Well, this is just a sample of what's in store for this month. This is what I was able to find without much looking and I know about some of the other goodies as well. This month's disks are shaping up to be some of the best yet!! Check out the MAST BBS the week of the meeting of the latest update on this month's DOMs. A number of these programs will also be demoed at the

meeting as well.

If you can't make the meeting and would still like to get ahold of the DOM or would like to get ahold of the DOC disk, my new address is

5900 65th Avenue North

#204

Brooklyn Park, MN 55429

That's it for April. It's short again this month, but you still get the complete lowdown. Keep those comments coming. A number of new disks are being worked on now. Requests are always welcome. I hope to see you all at this month's MAST meeting and on the MAST BBS.



Build Your Own Hard Drive for Under \$200!

(Part 2)

by Jim Johnson

Well, after reading last month's column, you have probably been saving your nickles and dimes to buy the necessary parts to build your hard drive. This month we are going shopping...

Before we drain your piggy bank, we need to talk about drive encoding methods. We have talked about the various communication interfaces, but there is one more thing we need to understand before we buy our drive and controller. When hard drives were introduced, the method of actually putting digital data on the magnetic surface of the disk was called Modified Frequency Modulation (MFM).

Recently some advances were made on this technique to place one and half times the amount of information in the same physical space on the disk. This method is known as Run Length Limited (RLL). The concept is similar to the difference between single and double density formats on floppies.

Controllers are manufactured as either MFM or RLL. None of the ones you are likely to find will do both. If you have ever tried to format a diskette rated as single density in double density, you know that sometimes you are successful, and sometimes you are not. However, if you try to format a double density rated diskette in single density you never have a problem. The coating on the double density disk is of higher quality. Well, it is the same way with hard drives. Drives rated for RLL will also work as MFM, but with a lower capacity. Drives rated only for MFM might be RLL formattable, but it is likely you are going to eventually lose data.

If you build your drive from surplus or used controllers or drives, I recommend that you stick with MFM encoding. Early RLL certified drives were not terribly reliable when using RLL encoding. Odds are "tested" RLL certified drives on the surplus market were tested at MFM data densities. Also, RLL controllers have a tendency to transmit the data they handle faster than the 8-bit machines can handle it. RLL controllers are also a bit more expensive than MFM controllers.

Our more astute readers may have noticed that there are several drives on the market with SCSI controllers built into them, instead of the ST-412/

ST-506 interface. I don't recommend them. The MIO doesn't like them, and ICD says that only certain models will work with the ST Host Adapter. On top of that, you will often pay more for a SCSI imbedded drive than you will for comparable capacity obtained from a separate surplus controller and drive(s). Many non-imbedded controllers can support the simultaneous operation of two or more physical drives.

OK, what should you buy? For starters, look in the documentation that came with your MIO or ST Host Adapter. You will find a list of drives and controllers known to work with your host. The SCSI (MFM) controller ICD sells for their hard drive kits is the Adaptec 4000A. I have seen this controller listed in a Computer Shopper ad for as low as \$60. If you are using a MIO, you can find Xebec 1410(A) SASI controllers as inexpensive as \$40. Check whether or not the price includes the technical manual. You may not need the manual, and likely won't understand most of it, but it can be invaluable for locating the proper switches or jumpers to configure the controller for your computer. If you didn't get a manual, and run into problems, you may have to call the manufacturer for a copy.

Seagate drives may or may not be the world's finest drives, but they are generally reliable as a brand, and there are lots of them with ST-412/ST-506 interfaces on the surplus market at reasonable prices. However, don't overlook the numerous other suitable drives and controllers. The only drive brand I would strongly recommend AGAINST buying is Computer Memories Inc. (CMI). IBM bought 20 meg versions of these drives on low bid for

the original AT. They have a very unreliable track record. In most cases, you will not get a technical manual for a surplus drive.

Almost all the drives, controllers and cases on the surplus market have a form factor of 5 1/4 inches. If you buy a 3 1/2 inch drive, you may have to find a adapter to secure it inside the case. Some cases expect the drive to have its own faceplate, and some cases don't. Its no big deal either way. You can always cover the opening by bolting a piece of metal or plastic over the opening. Ou aim here is function, not beauty. You will have to shop around to pick a drive,controller, and case combination that is the best overall buy.

You will need several cables and cords. Did your power supply come with its own three prong AC power cord? If not you will need one. Is there just one power output plug, or two? If there is just one, you will need to buy a 'Y' adapter that converts one into two.

You will need a 50 pin ribbon cable with a 2 X 25 pin socket at each end to go between the host and the controller. The ST Host adapter is installed inside the drive case, so twelve inches is sufficient. The MIO is outside the drive case, so you will need at least three feet. (ICD charges a very reasonable price for a ten foot MIO to controller cable with connectors already installed.)

You will need a 20 pin and a 34 pin ribbon cable to connect the controller to the drive. All drives use card edge connectors. The controller typically uses a 34 pin card edge connector, and a 2 X 10 pin socket connector. Check yours before buying cables. Local surplus

retailers often sell the 20 and 34 pin cables as a pair, ready to install.

To build a hard drive on a low budget takes patience. Assembling my drive took an afternoon. It took three months to find the parts I needed at the price I wanted to pay. I checked frequently on the current stock of used parts at various places. As a result, my drive cost me only \$140 plus a couple long distance phone calls. Sometimes the owner will be open to limited negotiations on the price of used parts. There is a list of possible sources for your parts at the end of this month's installment. By no means is this a complete list, or can I say that any one supplier is better or less expensive or more likely to have what you need than another.

I had hoped to begin assembling your drive with this installment, but we have run out of room. You should only need a few simple hand tools to assemble your drive. Primarily you will just bolt and plug all the pieces together. All this fun stuff will be in the next installment. We will assemble everything, pass along a few tips on how to identify and set switches and jumpers for your computer, and try to get you up and running! In the meantime, Happy Shopping!

Possible sources of parts:

ABC Electronics
315 7th Ave. N., Mpls
332-2369

AEI, Inc.
224 Washington Ave. N, Mpls
338-4754

Computer Fitness Warehouse
80 Minnesota Rd., Little Canada
482-9836

Endless Electronics
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INDUS Drive Transport Replacement.

By Rich Mier, SPACE, St.Paul, Mn.

My Indus Disk Drive has a lot of miles on it and, alas, was comming up with some Strange Errors. After swapping all the socketed chips on the main board, I determined that it must have a bad Read/Write head.

The strangest problem was that it Seemed to work correctly when used with SpartaDOS 3.2d, Double Density, but with SpartaDOS X, would ran-

domly fail trying to read/write to sectors 37, 38, and 39. If it didn't get an outright failure, the data on the disk would be corrupted and with no error indicated. That threw me, so it took awhile to convince myself that it Was the Drive Transport that was bad.

By now I had been using it with the case removed, the Deck resting on the top of the front panel and a wooden pencil across the rear beneath the deck. The TANDON Part No. is 211014-001 and checking around town, I could find no replacement deck, anywhere. Everyone I talked to said I'd have to send it back to Future Systems, or at least go to them for a new deck.

I can't afford to lose my disk. I only have one as I have a 320K XE and a 256K MIO. All I need is one when I have 2-192K RAMDISKS available.

American Techna- Vision advertises a direct replacement Mechanism for a 1050 Drive so I called them to see if it would work in the Indus. They didn't know and couldn't even give me a Tandon Part Number. They did say that they have gotten orders from small companys that repair Indus drives. Taking a chance, I ordered one on the condition that I could return it if it wouldn't work. \$47.50 plus shipping and UPS 2nd day Air. Total, \$56.00. Cheaper than what it was going to cost me if I had to take it to a Dealer or send it out to be fixed.

Monday evening I ordered it and Thrusday afternoon it showed up. I checked the Part Number first. Different! Part No. 216024-019. Digging out the wires, I found a couple markings that were the same. Mechanicly, it was

the same, but on closer examination there were several differences. 1) There was no Timing hole sensors. 2) The plug coming from the Stepper motor had 6 wires versus 5 on the old deck (both have a 6 wire connector). Also, the colors were completely different. 3) The wires coming from the drive motor where the same color, but about 3 inches shorter. (The Drive motors where identical.) 4) The micro switch against the rod used to twist and engage the floppy had 3 wires on it and the old one, 2. 5) There was 1 less connector plugs.

Cutting some plastic tie-wraps on both decks, I traced out the wires. Here's what I found:

The missing connector is J12 (4 pins) on the old deck. It is the timing hole sensor. Well, Atari doesn't use the timing hole. Ignoring it, I went on.

The three wire connector marked '14' on the new drive is the Micro switch marked '5' on the old one and isn't used.

The two wire connector marked 'J12' on the new drive is also 'J12' on the new one. It is the front LED and isn't used on the Indus.

'J11' on both decks is the Write Protect Sensor.

'J10' on the new deck is the same as 'J09' on the old one. The head 'Track 00' sensor.

The wire from the R/W head is a 5 pin connector, same as the old drive, and is long enough to work. There is a difference in colors of the wires to which

pins, but the Ground is right. I assumed the difference in wire colors is because of a different manufacture of the head itself and that the plug was wired correctly to work.

The last one was the Stepper Motor plug, J3 on the old one and '15' on the new deck. A six wire connector. The stepper motors were made by two different companys so maybe it would work as is. Also, on the Indus motor control board, pin 6 was not used. No foil connected to it.

Here is what must be done to make it work:

1. Remove the Motor Control board from the top of the old drive. Note that all the plugs are marked on their top side.
2. The two screws on the top right of the new drive must have the lock washers removed so the motor control board will fit.
3. Arrange and tape the wires coming from the R/W head the same as the old drive.
4. Now the only tricky part of this. The wires coming from the motor are too short. On the Motor Control Board, remove the 4 wire connector (marked J4 on the board) for the motor plug, J1. Use a small soldering iron and a solder 'Sucker'. Turn it around so the pins are pointing to the left and re-solder it in place.
5. Install the Motor Control Board and cardboard insulators on the new deck, taking care to position the R/W connector and that the board and insula-

tors clear the top floppy idler hub.

6. Connect the R/W, 5 pin connector with the '0' up, the same as it was on the original.

7. You will have to cut some plastic tie-wraps to free the drive motor wires. Turn the connector UPSIDE-DOWN, so the 'J1' marking is down and the 4 pin retaining slots are up and plug it into the connector pins that you turned around. Be sure they won't interfere with the head movement.

8. Run the Stepper Motor connector up through the frame as was done on the old deck and plug into the 6 pin connector, the marking '15' up. On mine, the 2 red wires were towards the front of the drive, pin 5 and 6.

9. Locate and clean the two mount holes on the left side of the drive where the label is.

10. On the left side of the old drive, mark on the frame above the 3 plugs, the 'J' number found on each of the 3, 4 pin connectors as you remove them.

11. Loosen the two screws holding the front panel to the Indus frame. On older drives, you might have to remove it as the panel connectors on the bottom board were too high for the deck to clear them.

12. Remove the old drive, 2 screws on each side of the frame, and lift it out. Now is the time to fix that front door if you've had problems with it.

13. With a screwdriver, pry off the front lever on both drives and swap them. The lever on the new one is too

long to fit through the front panel and work.

14. Keeping the wires clear, install the new deck, adjust its position and snug the two screws holding the front panel to the frame. Plug the rear Flat Cable into the Control board.

15. There should be four connectors at the left, rear. The two wire (J12) and the three wire (14) won't be used. Tuck these away at the rear so they are out of the way and won't short to anything.

16. Find the connector marked J10 and plug this into the front most pins where J09 was on the old deck.

17. Find the connector marked J11 and plug this into the rear most pins where the old J11 was.

There, that's it. The now unused pins, J12, won't be used and aren't needed. They were for the Timing Hole sensor. If you REALLY want to, you could maybe pry out the LED and sensor from your old drive and reinstall them, but WHY? They aren't needed.

One thing I did learn from trouble shooting my problem. The Floppy Controller Chip used is capable of controlling a Double Sided drive. It's a Western Digital, 2797 type. Anyone need a challenge? How about a kit for a 5 1/4 inch Double Sided, Double Density drive or how about a 3 1/2 inch drive? 80 tracks, double sided is 720K. The hardest part would be the Micro Code for the Z80 that controls it.

Mail articles to:

David Melle
Box 13038
Minneapolis MN 55414



BATTLEZONE 8 Bit Cartridge Review

By Ken Modeen

"It's 1999, and all the nations of Earth have agreed to peace."

But power-hungry rebels have sent out a huge fleet of robot war machines.....The one defense weapon left on Earth is a vintage military tank. It's your only hope for searching out enemy machines and destroying them....."

The preceeding paragraphs are a condensed version of the description found on the BATTLEZONE game cartridge package. OOOoooo it sounds exciting! But then,so does the package description of half of the commercial game software I have seen. We all know, the proof is in the playing.

I'm not a gamer. I usually don't buy game cartridges new. I tend to pick them up at meetings for five bucks or so. I have however, been waiting for over a year to get a peek at the BATTLEZONE cartridge for the eight bit computer. When I saw it at Wizard's Work, I bought it.

Now I really had a thing for the BATTLEZONE arcade machine. I still do. It's tough to pass it by even now days. Keeping that in mind, my expectations of the cartridge were pretty high.

There's a bit of good news for all of you non-XL,XE owners. I own a couple of 48k 400s that my children use. The cartridge works fine on those machines. The cartridge also works fine on my 256k 800xl. So its pretty safe to say that BATTLEZONE is probably going to

work on your machine whatever it is. Because the cartridge is marketed for the XE game machine, the package really makes no mention of hardware restrictions so I wanted to specify what machines I've run it on.

BATTLEZONE is a one player game. The resolution is rougher on the 8 bit version of course, but I didn't find it a major drawback. The fact that everything on the screen is frame type objects, the resolution difference doesn't really change the visual effect drastically.

The game has five different levels. The player chooses the level with the option key. The program doesn't move to the next level during play. The player just keeps on racking up points within the same level. I found no level to be a particular cake walk. This is due mostly to fast moving missles which zig-zag across the screen and collide with your tank. Even the best video nut will find level five pretty difficult to put a decent score on the screen. Reserve tanks are awarded at 15,000 and 100,000. Even at level one I have not gotten 100,000 points.

All in all, I am very pleased with this cartridge. I find it to be as close as it can be to the arcade machine. Wizard's Work had about a \$29.00 price tag on it. It was marked down to \$27.00, and with my [T.A.I.G.] membership* discount, I purchased it for \$22.50.

** Ed. - Wizard's Work offers a membership discount to SPACE and MAST members. Be sure to bring your membership card with you when you make a software purchase!*



Back Page

by David Meile

I'm trying something a bit different this month. Now you can zero in on articles relating to your particular computer quickly and easily. If an article is 8-bit specific, it will have one icon, if it is ST specific, it will have a different icon, etc. Here's what the icons mean...



Club-wide article



Atari 8-bit article



Atari ST article



8-bit DOM / review



ST DOM / review

I hope that this system will make it a bit easier to go through each issue of the SPACE/MAST Newsletter.

Check your mailing label to see if your Membership has expired!

Interested in MIDI? Attend the MAST meeting to discuss a meeting time.

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SPACE and MAST are independent user groups of owners of ATARI Home Computers. It has been organized by local owners of ATARI computers for the purpose of mutual self assistance and sharing of information. It is open to all interested computer enthusiasts.

Benefits of memberships in the groups include monthly newsletter mailed to your home, BBS access, software demonstrations, group purchases, public domain disk(s) of the month software at low prices, reference book library, educational software library (8-bit only) with over 20 titles, personal contacts/learning, greater information and awareness on the world of ATARI, software at discounted prices from dealers, question and answer session, etc. Come to a meeting to find out more.

SPACE - 8Bit Group The SPACE meetings are devoted primarily to the 8-bit ATARI computers such as the 400, 800, 600XL, 800XL, 65XE and 130XE. There is other ATARI related news and some 16-bit news at the SPACE meetings, as well. The SPACE group meets on the second Friday of each month at the Falcon Heights Community Center, 2077 West Larpenteur Avenue, at 7:30pm. Doors open at about 7:10pm.

MAST - ST Group The MAST meetings are devoted primarily towards the ATARI 520ST, 1040ST & MEGA computers. There will be ATARI related news items covered, but not 8-bit news. The MAST group meets on the third Friday of each month at the Falcon Heights Community Center, 2077 West Larpenteur Avenue, at 7:30pm. Doors open at about 7:10pm.

MAST+ - Programming Language User Sig MAST also has a programmer's group meeting. This group has a more technical discussion regarding programming the ST computers in a variety of languages. The group meets on the Monday following the MAST meeting at the First Minnesota bank on Lexington Avenue near Larpenteur Avenue. Meeting time is 7:30, with doors opening at about 7:20pm. The entrance is in the back of the building and leads to a stairway to the second floor.

For more information, or to confirm a meeting time and location, call Greg Howell (SPACE) 636-0381 or Jim Schulz (MAST) 533-4193

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