# Saint Paul ATARI Computer Enthusiasts
## SPACE
### An independent computer user group

# MAST
## Minnesota Atari ST

## In this issue:

## From the editor

How to tell when you should renew your membership:

The mailing label looks like this:

```
SPACE/MAST  exp 9001 (message)
Your Name
Your Address
Your City, ST ZIP##
```

If the expiration date is 9001, then January 1990 is your last issue, and it's time to renew. If the date is 8912 or earlier, you are past due and should renew immediately. Currently there are 22 members who need to renew for another year and 21 members who are past due in membership renewal. So, check your label!

-- David Paschall-Zimbel

## Treasurer's report by Allan Frink

Correction for December 1989:
MAST welcomed Greg Peasley as a renewed member and not Steven Pauley as written in the newsletter for December.

Bank balances as of 5 Jan 1990
SPACE: $210.17
MAST: $285.75

[ed. note: Allan wrote that the bank balances remained the same as those published in the last newsletter because there were no deposits or payments made during the month of December. Room rental for December and January, and newsletter costs for the January and February issues, as well as DOM costs for December and January will come out of the current balances plus deposits made in January. So, buy those DOMs so we may make operating costs!!]

Membership counts are:
SPACE: 37
MAST: 78
Both: 10

## February newsletter articles are due the week of 29 January!

## News from the Pres
### By Jim Schulz

First off, a happy new year to all as we enter a new year and a new decade in 1990. The overall outlook looks good for the ST and MAST in the coming year. This month, we will look at a number of current issues, what's behind, what's current, what's ahead, some news and some miscellaneous stuff as well.

First up, a reminder!!!! About 75% of MAST members memberships are up for renewal in the first three months of 1990. With Christmas new system purchases and the MAST annual birthday party, this seems to be the time of choice to sign up for MAST. Please check your label on the back of your newsletter. If you are up for renewal in February, please think about renewing early. Each year, Allan gets buried for quite a while with renewals at the birthday party. Help us and Allan, renew early. Also, if you can't make it to the meetings, use the membership form in the newsletter and send it to the SPACE/MAST post office box. I pick up the mail weekly and your membership renewal will be recorded. MAST has quite a bit planned for the year to come. Don't get left out!!!!

Next, two old topics, Z*Net and AIM. I have written both of these companies in the last week so that for once and for all we can settle the situation. Z*Net did arrive just in time for the December issue, but because of non-payment of $90.00 in back printing charges, it was not printed. If we get the printing charges reimbursed and the address corrected so that we actually get it on time, it will more than likely return next month. If not, we will once and for all put Z*Net to rest and continue to go along without it. The latest issue of Z*Net has gotten quite newsy since the last printing covering the recent COMDEX show, three pages of news items from both the US and Europe, a closeup look at the Turbo 816 upgrade for the 8 bit, a Portfolio review, and a look at the latest public domain and shareware software. I have not heard back from them so I don't have anymore news. This issue will be put to rest at the end of the month. For new members, Z*Net is an Atari newsletter supplement which is 12 pages with news and ads. And for publishing it, we get reimbursed based on the number of issues printed. The overall cost to SPACE/MAST is small for this because the money reimbursed just about pays for the extra printing and postage.

Now on to AIM, AIM is a magazine similar to the Current Notes magazine which is being sold as a user group newsletter replacement. AIM was discussed in a couple of meetings and then we had trouble getting hold of the AIM editors so things have been in limbo over the last few months. This past week, I got a copy of the latest issue and wrote them to see what we can do with them. AIM has three options for user groups. Option 1 is a complete replacement of your current newsletter for a cost of $0.50 an issue to the members. Option 2 is a second newsletter for all members at the same cost. In both option 1 and 2, the user group get about a page each month inside the magazine to tell what's going on, similar to this column. Option 3 is to offer the AIM magazine as a subscription at a discount. Under this option, AIM is $15.00 a year vs. the subscription price of $18.00 a year. This is the information which I received from talking to the editors. Newsletters and the cost to produce them has become a hot issue among user groups over the last few months. The user group from Duluth has recently replaced their newsletter with AIM. Based on some of the user group newsletters, a number of other groups are joining up as well. AIM told me that five new groups were added in the January issue and the magazine has been added more pages to accommodate the new groups. We have discussed in the past continuing this newsletter and the response has been overwhelming to keep it going. Dave is doing an excellent job and it is showing by your support. So option 1 is out. Option 2 looks enticing and looked like the best option, but the kicker which I wasn't told about in the past was that all members need to get the AIM magazine. If we go this route, all membership fees would have to be increased up to $6.00 a year to support the added cost. So it looks like option 3 is our best bet. This is similar to the current situation with Current Notes. I have a couple of issues of AIM coming in the mail so you can look them over at the meeting. We will make the final decision on this at the meeting.

Enough issues and on to last month..... Last month, we had a cold night for a meeting. We had a pretty good crowd, but only two STs for MidiMaze. It was just a little too cold to bring out the old ST. We did have our news and rumors, a goodly number of DOMs at a cheap price, and our raffle of the copy of Midimaze. With the Christmas music in the background, it was a good meeting for all in attendance.

This month........ This month, we will look at some of the new software which has come out over the last few months. Some of the demos include the new Chaos Strike Back!!!, DC Utilities, Hotwire, and Maxifile. More demos are in the process of being scheduled. Also for those of you who missed out on the great DOM deal last month, we are extending it for one more month. Yes, you can get all of the MAST DOMs for $4.00 each for one more month!!!! Also we will talk about the latest news from this month's CES Show, and other late breaking news and rumors. Lots of questions and answers as well. It should be another great meeting.

Coming in the months ahead...... Next month is one meeting not to miss! Yes, February marks the fourth year of MAST and time for another birthday party. We will have birthday cake, pop, and our annual raffle of ST gifts as well. And a few surprises????? Stay tuned here next month for more information.... The raffle currently includes a copy of Pagestream from SoftLogik, a Tweety Board, and the new game Chaos Strikes Back for starters. If you have software that you aren't using, donate it to the raffle others can get good use out of it. Also we n volunteers for bringing munchies and helping out. See Dave or myself if you would like to help. Coming in March is another MAST swap meet. In the months to come pending their release, an emulator night including PC Ditto II and the Spectre GCR and a night of ST utilities including UIS III, Turbo ST, and more. So lots is coming in the months ahead. Also Stacys are coming very soon as well. As always, keep watching here as MAST moves ahead!!!

Now for some news!!!!!!! First, a time of mourning.... Another ST magazine has folded. This time, it is ST Xpress. It looks like their special issue was their last. It also looks like problems are occurring at ANTIC/START as well. Quite a number of their longtime editors are leaving the magazine for other jobs. This doesn't bode too well for START, although START is proclaiming a bigger and better magazine this month. STACYs are coming soon. Now that the FCC has given some approval, you should see them in your favorite computer store in the next few months. Wizard's Works has been approved of as a STACY dealer. The new STE is also just around the corner as well. This computer seems to be stuck in the FCC. It is currently available in Canada and is selling like hotcakes. The dealers can't keep them in stock. One store sold out of 50 STEs in just two days!!! Finally, this is a hot off the press rumor for the coming CES show..... Atari will be announcing a new ST package called the "Atari Power Pack". This will include a 520STFM and a goodly sum of software for around $400. The software lineup looks like Music Studio, Neochrome, Planetarium, Maps and Legends, Star Raiders, Missile Command, Alien Brigade, and F15. Also included will be either the Timeworks set of Word Writer, Swiftcalc, and Data Manager or the set of First Word Plus, Phaser, and Informer II. The three applications packages are still in the discussion stage. Either way, this sounds like a super package for a new user. For complete information on this and other ST late-breaking news, don't miss this month's MAST meeting.

Now it's that time for more miscellaneous news..... We have just recently received two copies of Pagestream from SoftLogik. One for Dave and the newsletter and one for the birthday raffle. We will also be making available a demo copy of Pagestream as well. Look for a review of Pagestream in the months to come. Also, if any members have any public domain fonts, could you please pass these on to Dave? The more fonts that we have, the better the newsletter will look and we also won't have to locate and download the additional fonts. (Bruce, are you listening?, please) ..... Also we now are associated with Bix's user group program and information service. Bix information is included with this month's issue and an additional logo is on the front cover of the newsletter.

Help!!!!!, Could we please get a volunteer who

be willing to write up the minutes of each th's meeting for the newsletter? See Dave myself if you are interested.

Finally.... don't forget the Sony double-sided disks for $0.80 each. We still have them in stock at this good low price, but they are going fast. Also MAST has two single-sided disks for sale for $50.00 each. This is a great way to get a second drive!!!! If you are interested, see Allan at the next MAST meeting. Don't forget the MAST BBS either run superbly by Tom Cook. Give it a call at 472-6582.

Well, that's it for January. The envelope has opened it flap and says "Buy Chaos Strikes Back!!!" repeatedly. I suppose we should all check this out at the next meeting. Also it is available now and in quantities, not like two years ago when Dungeonmaster came out. So until next month, have a Happy New Year. I hope to see you all at the January MAST meeting and at the MAST+ programmer's meeting the following Tuesday.

## Minutes of the SPACE Meeting (NOVEMBER 1989) by Larry Vanden Plas

1. The meeting was called to order November 10, 1989 at 7:30 PM by President Greg Howell.

2. The minutes of the October meeting as printed in the newsletter were approved.

3. Larry Vanden Plas reported that SPACE had acquired two years of ANTIC magazines with disks and they would be rented to members for $1 per month. A deposit of $5 would be required on each.

4. The treasurer reported that there is about $160 in the SPACE treasury. There is a need to buy disks.

5. Amos Jackson said he was confident that he had gotten the bug out of the BBS. The Board had had no problems for 56 hrs. He recommended that everybody calls at least once every 14 days to get their E-Mail.

6. Dave Cole reported that he has not had time to find anything to say so he had nothing to say.

7. Greg Howell reported on MIDI. He reported that AIM, the Atari Interface Magazine, had been criticized by CHAOS, a major Michigan user group. Greg Peasley said that AIM had publically quoted informal comments and rumors as fact. Some claim the user group had lost control of AIM. Others indicated that CHAOS never had control of AIM. The owners of AIM said if you don't like it, don't send your money. AIM is no longer a user group magazine.

8. Ron Van Rossem was nominated for Treasurer. There had been an informal agreement to rotate the treasurer between

SPACE and MAST. Questions were raised about having a separate treasurer for SPACE.

9. Hardware Problems. Questions were raised about the 410 tape recorder. Error 138 is indicated. The recorder plays, but the computer has no control of the remote. Other people reported similar problems with the 410. The recorder first mentioned had previously worked with a 400 computer, but did not work with the 800XL. Another member reported that the values of the resister were too wide and he had seen an article suggesting replacement of some resistors with more precision resistors. Another member reported that if you sent an 810 diskdrive and $75 to Atari, they would send you a 551. Most agreed it was well worth it. A question was raised about files on the BBS with the suffix ".AMP." I was suggested they were for a music player.

10. Joe Danko, the Disk Librarian, reported that he had been on vacation and then became sick so there was not an article in the newsletter. However the article for November will be in the December newsletter. He also provided copies of the newsletter article for those who wanted them now. The December Disk of the Month will have a library and data base. NEW PRICING POLICY -- All disks will be $3 each. There have been steady mail order sales. There is also a request to purchase or rent the entire library. There are over 100 disks in the library. CHAOS has a program to rent, leaving a deposit, or purchase.

11. ELECTION RESULTS -- Greg Howell was reelected to be president and Nathan Block was elected to be vice-president. Allan Frink was elected to be treasurer by acclaimation.

12. There was a discussion about a by-law admendment allowing SPACE to have its own treasury. A checking account would cost $1 per month and ten cents per check. Currently printing and mailing costs for the newletter are split 50/50 between SPACE and MAST, not prorated. MAST has about double the number of member that SPACE has. The use of a free room at the bank was mentioned as a way to conserve money. A motion to pursue a separate treasury for SPACE, to continue to share the newsletter and explore the use of a free room was passed.

The meeting concluded with a demonstration of the DOM and many small discussions.

## Minutes of the SPACE Meeting (DECEMBER 1989) by Larry Vanden Plas

1. The meeting was called to order December 8, 1989 at 7:40 PM by President Greg Howell.

2. The minutes of the November meeting were read because the newsletter was not out yet.

3. Jim Scheib, the paper librarian and reinker, reported that the library is looking for donations. He also asked that members bring their ribbons in for reinking. He wants them to trickle in, don't let them accumulate. Jim will reink ribbons for members for only $1 each and $2 for wide carriage Epsons.

4. NEWS AND RUMORS Joe Danko reported on a new group: FACE, Federation of Atari Computer Enthusiasts. If we became a FACE BBS, they would send us a disk each month. To qualify the BBS needs 2 meg of space available and run at 1200 and 2400 baud. We qualify. It we send a stamped, self-addressed envelop, they will send a free demo disk.

5. BBS Amos Jackson reported that he had made corrections to the modem. There have been some probles with the Y-modem protocol. One member logged on with an ID and password; then he got hung up. Amos reported that you can answer "Y" to skip system news and it will skip the news until it is updated. Carl reported that a 134 or 135 error occurs when an 80 column machine logs off. It runs normal, but the error shows up only when the machine logs off. Amos said one set of commands will disconnect the next caller if he logs on too quickly after the previous caller logs off. Amos requested that all old E-Mail be deleted because it is starting to pilw up. He will delete all E-Mail received. If you want it left on so you can print a hard copy, sent the sys op a message.

6. VP's REPORT Nathan reported that is working on a repair special interest group (sig). He will have information on a table in the front of the room. He had a new catalog of Public Domain disks, many of which he had not seen before. The answer to the biggest question -- Where do I buy software in the TC's? -- is Computer Station, where they also have the lowest prices. A user group and store in Florida went under. He got five letters looking for help. He also received a letter from a user in France; the address is available.

7. PRESIDENT'S REPORT Greg Howell reported that we need a secretary. Larry will resign in March or sooner if one is available. We will have to postpone the vote on a separate treasury. There was a discussion that we currently have a joint treasury and we would more control. Our treasurer would be at SPACE meetings. This might separate the groups more than they are now. We may have to add a member to the board. MAST is a very volatile organization in regard to money, e.g. the last report put them $300 into the red. SPACE was technically solvent, but the account was almost broke. Greg does not want to separate the groups. Membership is about one third SPACE and two thirds MAST. There is a need to resolve newsletter costs which are now split fifty/fifty. Overall both groups are better off sharing a newsletter. Costs are about $90 for printing plus 25 cents each for postage. Greg will try to get a free room. There was a motion

to add a SPACE treasurer to the board.

8. DEALS  Budget Computer is selling 8-bit software, magazines and books, 40 to 25% off. There is a lot of software, all is original wrap. Loderunner Rescue is selling for $4. It is located near University and Osborne Road, next to U.S. Swim and Fitness. There is a little hardware. CMO is clearing out all Atari, a U.S. Doubler is selling for $23. There was an ad in the November/December Antic. Antic is now bi-monthly. The SX212 is on sale with SX EXPRESS.

9. WANTED  Jim Scheib is looking for Graphics 8 drawing programs. He believes some are in the library.

10. INFORMATION  Nathan has a MIDI compatible keyboard. Rainbow Music has a MIDI interface for the 8-bit. If you have a SF551 -- leave the cable in the disk drive once it is plugged in. The connection is very weak. One of the members is in contact with Roy Golden. Daisy Dot III is very nice. It is not know whether it will be Public Domain or Shareware. It has beautiful fonts. Roy hopes to be able to receive some of the more popular word processors. It will support underlining and micro-spacing. The Atari Portfolio sells for $399, offers a very clear 40 column screen, a very functional word processor, is Lotus compatible, has communications and runs MS-DOS. They can not make them fast enough. Atari is also offering Lynx, a small game machine. Black Box, $200, by CSS picks up where the MIO left off and is on sale now.

11. DISK LIBRARY  A library index disk is available for $1. It will give information by DOM, category, text file, text file, a synopysis of what the program does and can be read on a monitor. The DOM has several shareware games. The Force of Four is a tatical war game.

12. The meeting concluded with a demonstration of the DOM.

## GENERAL INFORMATION (SPACE)

St. Joseph's Home for Children is in need of Atari compatible software, monitors, printers and disk drives for computer simulation exercises used to supplement the children's eduction cirriculum. If you can help, please call Noah Miller at 827-9318. Thank you.

The parts to make a Morse Code Receiver that takes the code from a shortwave transceiver and translates it at up to 70 words per minute are available from Larry Vanden Plas. The receiver was put together on a bread board and worked well. The article appeared in the November 1985 Antic. See Larry for more info.

Members may rent Antic magazines with disks

for $1 per month. There is a $5 per issue/disk deposit.

## SPACE 8 BIT SOFTWARE LIBRARY NEWS
### January, 1990
### by Joe Danko, Disk Librarian

It's 1990 and we are still here, wherever that is, those of us that are still here. Well, never mind that, we are just taking life with the ATARI 8's one day at a time. Speaking of which, I am really short of that precious commodity these days. I spent most of the two weeks proior to Christmas in Chicago at UNISYS school and gained five pounds. Enough of that!

Software is quite scarce right now but we managed to scrape up enough to make the DOM interesting at least.

I would like to mention a few things before we get to the DOM. Anyone who can't make it to meetings and needs to purchase software is encouraged to either call or write directly to me:

Joe Danko
2766 Chisholm Av. N.
North St. Paul, MN 55109
(612)777-9500

Current prices:
All disks are $3, plus:
$1 for shipping for each 5 disks

If anyone has public domain software that is not in the library we will trade disk-for-disk.

January Disk-Of-the-Month
SIDE 1

| | | |
|---|---|---|
| DOS | SYS | 037 |
| DUP | SYS | 042 |
| >SPACE_DOM< | | 001 |
| >01_90___1< | | 001 |
| AUTORUN | SYS | 001 |
| MENU | | 035 |
| CLOWN | OBJ | 027 |
| TIEFIGHT | BAS | 055 |
| CARTAG | BAS | 061 |
| ZIP | BAS | 030 |
| OLYMPIAD | BAS | 058 |
| OKI10UTL | DOC | 012 |
| EJECT | COM | 001 |
| PSOFF | COM | 001 |
| PSON | COM | 001 |
| TIDIER | COM | 028 |
| PERCOM | TXT | 023 |
| STEREOXL | TXT | 089 |
| GUMBY | ARS | 012 |
| GUMBY | BAS | 048 |
| GUMBY | COM | 011 |
| GUMBY | DOC | 024 |
| ACTSND | DOC | 047 |
| STRSND | ACT | 008 |

054 FREE SECTORS

CLOWN.OBJ
Machine language game that needs a joys[ ]. You must make the clown jump from ballon to ballon from one side to the other and pick up money along the way.

TIEFIGHT.BAS
Basic space shooting game requiring a joystick. Get the enemy in your sight and blow them away.

CARTAG.BAS
Basic two-player game. Take turns being it and chasing each other through the maze. Uses joysticks.

ZIP.BAS
Basic two player line drawing game. seee how long you can draw without touching anything. Uses joysticks.

OLYMPIAD.BAS
Basic two-player game using joysticks. Navigate the maze and try to shoot your opponent.

OKI10UTIL.DOC
EJECT.COM   PSON.COM  PSOFF.COM
This group of files allows the user to gain more control of the OKIMATE 10 printer.

TIDIER.COM
A machine language file used mainly to process end-of-line codes in text files.

PERCOM.TXT
Technical information on the PERCOM disk drive.

STEREOXL.TXT
GUMBY.*
ACTSND.DOC
STRSND.ACT
This group of files is a set of instructions, documantation and software that adds a second POKEY chip (called GUMBY) to the 8 BIT computer allowing true stereo sound.

SIDE 2 has a new special version of TEXTPRO 4.0 for MYDOS. This side also includes MYDOS 4.50. If you are unfamiliar with these programs, TEXTPRO is the best text editor for the 8 bit ATARI and is available in many forms and versions. MYDOS 4.50 is a public domain disk operating system that supports all types of disks and RAMDISKS, subdirectories and other features not available in DOS 2.0/2.5.

## MAST Disks of the Month
### By Jim Schulz

Well, it's DOM time again. This month, I will start with a rundown of last month's disks and then what is in store for this month. With Christmas time, things have been a little hectic again. I will give you a quick rundown of some of the new stuff. I have quite a bit again this month, but I haven't had the time to wade through it all yet.

ere we go into last month..... Last month's
ection included  six new disks, five updates,
d two magazine disks.

#1 - ST Report magazine issues for December
#2 - ST ZMAG and ST Plug issues for
       December
#37 - ST Writer V3.4 (Latest version of ST
       word processor)
#78 - Uniterm 2.0E 009 (Latest version of ST
       communication program
#326 - NetHack V3.0 (Character graphic
       dungeon game)
#386 - BSTAT V2.34 (Latest version of ST
       statistical spreadsheet prg)
#417 - Ani-ST V2.11 (Latest version of ST
       animation program with docs)

#437 - December DOM #1 (Utilities)
#438 - December DOM #2 (Applications)
#439 - December DOM #3 (Games)
#440 - Music Disk #8 (Christmas Music and
       Pictures)
#441 - ANALOG Disk #37 (Magazine programs
       from the December ANALOG)
#442 - ANALOG Disk #37 (Magazine programs
       from the December ANALOG)

This month's selection included a number of
good programs. The utilities, applications, and
games disks sold quite well as well as the
Uniterm and ST Writer disks.

This month, there are a number of specials
again in the DOM world. First off, all DOMs at
both meetings are again only $4.00 each. This
includes current and past disks. For those of
you who didn't brave the cold last month, you
still have one more chance to get the MAST
DOMs at this low price. Second, we will be
selling all four of the volume 4 in the ST News
series at the  meeting. These have been
promised for who knows how long, but they are
now  done. These are the excellent disk
magazines from Europe. We will also demo  the
latest issue at the meeting as well. The price is
only $2.00 with more  disks from the past coming
in the months to come. Finally, the new MAST
DOC disk is done and available right now!!!! All
disks now have a one line  description as well as
a directory listing. The doc disk set is $2.00 for
2 disks or $1.00 for either disk in the set.
Finally..... I am thinking about putting together
some grab bag disks full of miscellaneous files
downloaded from the BBSs. These are things
which too specialized, animations, miscellaneous
demos, and assorted utilities, applications, and
games. Just a miscellaneous hodgepodge.
These will be on double-sided disks and will be
full of arced files. The disks would sell for $2.00.
If you are interested in something  like this, let
me know. It's just another cheap way of getting
more public domain software.  ..... One more
note. Chuck's selection of public domain GNU
utilities and source code are still available.  I
have had two request for  complete sets of
disks so far.  The GNU utilities total over 3
megabytes and  fill 8 ARCed disks and the
source code fills another 9 ARCed disks. These
disks are available on a preorder basis for

$16.00 for the utilities and $18.00 for the
source.

Now on to this month's selection of goodies.....
First off, the new version of Sheet, the
spreadsheet will see the light of day.  This is a
BASIC language interpreter, a database and a
graphing program all built into one. Also this
month, we have a new and super improved
version of ARC V6.02.  This version will
automatically ARC directories and is superfast
as well.  In  addition, there is a new version of
ArcShell to support the new features as  well as
better support for LHARC.  Also this month, we
have a new version of LGSELECT, the public
domain file selector, with a number of new
features.  The Quick ST people are at it again
with another update with a demo version.  We
have a preview of a forthcoming product from
DC with DC SHOWIT.  This program replaces
the system file show command for better viewing
of files.  For all you Dungeonmaster addicts, we
have a saved game organizer which will work
with  Chaos Strikes Back as well.  We also have
an update to the Sozobon C utilities with new
GEM bindings.  Finally, we will have the program
and instructions to make your own Blitz cable.
The Blitz program will allow you to copy any ST
disk, protected or not, with two disk drives and
a cable.  This program will format a disk in 18
seconds per side.  It is also the first legitimate
backup program because only copies made
from original disks or second generation disks
are good. Third and later generation disks are
not usable.  Full information is included to make
your own cable or where to buy one.  I
personally wasn't too hot on this until David
Small started pumping it up as a "good" backup
program.  When someone of David's reputation
recommends something, you listen. This is only a
sample of what I have this month.  More is
coming in daily.  And I even started checking all
of this month's collection......

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 January.  Please remember that this
is just the start of some of great programs for
this month.  Come to the January meeting and
get some great bargain DOM prices again this
month.  Happy New Year and I hope to see you
all at the meeting.

## JRI's J.A.T.O. 16mhz Accelerator
## by Nick Smith

I recently acquired JRI's 16mhz accelerator
board and thought I'd share my impressions of
the device with those who may have considered
the possibility of adding one to their ST system.

Regardless of which of the current boards you
might consider to enhance your ST with, the first

hurdle is getting your 68000  socketed.  This is
not a task to be taken lightly by those
inexperienced in soldering and desoldering -
you take the risk of totally  killing your ST's
motherboard.  In making phone calls trying to
locate someone  to do the job, I encountered
many refusals from businesses who wouldn't
even  attempt it.  From others, very high price
quotes for doing what I saw as a rather
straightforward task for a competant electronic
technician.  I found     Steve Zipf at Alpha Tech
((612) 524-0424) willing and able to do the job
for  $30.

I also needed to check the speed of the memory
chips in my ST.  Assuming they're pessimistically
rated, the chips must be 150ns or faster.  The
J.A.T.O. board will not function reliably with
chips that are slower - a few ST's were made
with lower quality chips or with 170ns DRAM's.  I
crossed my     fingers and hoped the 150ns chips
in my 520 were up to the job.

Both JRI and Steve recommend clipping the old
68000 for ease of  removal, so I obtained a
replacement 8mhz 68000 ($10) should I  want to
remove the 16mhz  board at a later date.  The
J.A.T.O.  board comes with a 64 pin, low-profile
soldertail socket so everything you need for
installation is included.  Other  than  soldering in
the socket, no other modifications are required.
The board  itself is the size of a piece of
chewing gum and comes pre-attached to a
handful of pins on a 16mhz 68000 chip.
Connected to the board are two sets of  lead
wires: One for the micro toggle switch included
to allow you to  enable/disable the accelerator,
and the other attached to a small red LED which
indicates when the J.A.T.O. is accelerating.

Installation was a snap. Using a drill with a 3/16"
bit, I  drilled two holes into the case of my 520:
one near the DMA port for the toggle switch,
and  another atop the case in the corner for
easy viewing of the LED indicator.  The LED fits
snugly into the hole yet can be easily pushed out
if necessary to remove the ST's case.  The
wires are 12" long, allowing you full freedom to
decide on their placement. After installing these
and pushing the accelerator  chip into the
socket, I reassembled my ST's case and was
ready to give my  souped-up machine a test
drive.

Problems!  In the first 5 seconds it became clear
that my system would not  boot with the
accelerator enabled - the computer would crash
with 11 bombs onscreen.  I tried it again with the
switch off and re-enabled it once the  desktop
appeared - everything ran fine. Calls to JRI
(which were very  informative and helpful)
suggested removal of a 20K ohm resistor on the
accelerator or replacing it with a 47K ohm
resistor as a possible solution.

TOS 1.4 PROMs may be slower than original 1.0
ROMs and ST's tend to vary in  the amount of
'slop' in their components timing. The resistor on
the board  attempts to compensate for this.
Particularly with later revision  accelerators,

(currently revision 'C') the J.A.T.O. board is far more tolerant and hence compatible with more ST's than early reviews in magazines had led me to believe. After removing the 20K ohm resistor with a fingernail clipper, my ST has booted flawlessly ever since. More importantly, after 2 weeks of use I have had NO unexpected crashes from using the board.

I was initially aware of the acceleration just manuvering around the desktop: opening, moving, scrolling, and resizing windows. Nothing breathtaking, but there was a definite and perceptable improvement in display operations. It reminded me of a few years ago when I replaced the 8088 chip in my PC with one of NEC's more efficient V20 chips - and again when I recently installed TOS 1.4 in my ST: a noticeable, yet subtle overall improvement.

My second task was to run Quick Index benchmarks on it to get some numbers to give me a frame of reference. The figures where speed improvements were reflected are shown in the table below:

Quick Index 1.6 Benchmarks
JRI 16mhz - Medium Rez

| CPU<br>Divide | CPU<br>Shifts | BIOS<br>Text |
|---|---|---|
| 182% | 179% | 122% |
| BIOS<br>String | BIOS<br>Scrol | GEM<br>Draw |
| 118% | 106% | 115% |

Watching the LED flicker as you mouse about your day to day operations of the ST is part functional, part novelty. It's interesting to note the LED's response to various applications. In programs which utilize the CPU divide\shift operations - most notably number crunching and graphics applications - the LED glows its brightest. Timework's Publisher appears to make a lot of use of the accelerators abilitites, making it very responsive to screen scrolling and redraws. (Something it's not known for!) The J.A.T.O. board's impact on this was very noticable, significant to those who work a great deal with CAD, EZ-Draw or DTP types of applications. The only program I encountered which dislikes the accelerated mode is Spectrum 512, though it runs fine at 8mhz. All the games I tried ran without a hitch. Zany Golf in particular really benefitted from the acceleration as you move around the scrolling playfield much more smoothly.

The bottom line: with the JRI accelerator, you get appreciable speed improvement for a little money and a good value for those wanting extra oomph! without a major investment. In the sports car world, this board isn't the equivalent of a bigger engine but rather, a high performance carbuerator that has a tachometer thrown in for free. And if even higher performance is on your wish-list, you've already got the socket installed. You can just pull out the J.A.T.O. board, pull out your wallet,

and drop in one of Fast Technologies Turbo-16 accelerators to put even more zip in your computing trip.

J.A.T.O. 16mhz Accelerator
John Russel Innovations
P.O. Box 5277
Pittsburg, California 94565
Phone: (415) 458-9577

List Price: $99.95
Street Price: $89

## Mini MIDI lessons
## by Morris G. Miller
### part 2 of a series

### WHAT DOES MIDI COST ?

Like watches, MIDI can cost as little or as much as you want to put into it. I can give you some price ranges, but they are arbitrary. I can give you some recommendations, but they are generalities. You will still have to evaluate for your application and make the final decisions.

The three basic components, aside from the computer, are the sequencer (software), keyboard and synthesizers, and the music sound system. The first two are most urgent to this discussion.

A starter sequencer is available from the public domain for most popular computers. I recommend starting with one, even though I did not. This allows you to find and settle on a keyboard first. Most vendors provide low-end versions of their sequencers starting in the $30 to $60 range. The high-end versions of the same programs will be from $300 to $700. Accessories can cost up to an additional $500, costing $20 to $100 for each added utility.

Software is expensive, but good programs are worth it. The low-end versions will not have all the features of the expensive versions, naturally, but will possibly have everything you need or want. Again, try them first.

Keyboard selection is more difficult, and should come first. As in a previous discussion, decide whether you need your emphasis on the keyboard or the synthesizer. Don't be carried away by the "local" features, such as rhythms, chords and fancy noises the keyboard can make while you play it. Most of these things will not be recorded on the MIDI. However, if your daughter will enjoy playing it live, then consider it. New keyboards start about $130 and go to $3000 or more. Keep an eye on swap meets, yard sales, classified adds and pawn shops. Someone gets a good bargain every day, somewhere.

Not all keyboards give the same amount of information. If touch sensitivity (how fast and hard the key is pressed and released) is important, then keep it in mind. The difference

? If the keyboard does not record how the note is performed, then it must be add the editor. If the keyboard does not respon touch sensitivity, it is very probable the synthesizer in it also does not. That could be more important. Does it have input for foot pedals, modulation control, pitch bend (glide pitch while playing), or pan (stereo balance). Many keyboards and their synthesizers are only monophonic (one output, not stereo). Examine it carefully. Seek advice and help if necessary.

You can add the sound system and cassette recorder as anything from a simple AM/FM radio and cassette recorder to a grand home music system. It should be stereo. The rest I leave to your imagination.

### WHY SHOULD I DO MIDI ?

Maybe I shouldn't. MIDI is not for everyone any more than is rhubarb pie. Ugh !

Why would I want to hear Fredrick Chopin's Polonaise played on a synthesizer when I have a compact disk of Philippe Entremont in performance ? Because 1) I had fun entering the music; 2) I gained a lot of understanding of both the music and Chopin by doing so; 3) it was edited until I had the performance interpretation I felt Chopin himself would give it; 4) I feel it is MY performance - as though I am playing it - doing it MY way; 4) It can be performed on any of a dozen and a half different pianos - my choice; 5) or played by a trumpet and bass; 6) or whatever interpretation I want to put on it.

Besides, who says I have to play Chopin ? Try your hand at Moonstruck. I'll bet you don't have that on CD. Put your own weird interpretations of sounds into it. It can sound "spaced out", tin-pan, heavy-metal, or whatever. Or, very smooth.

Did you ever want to sing with your own orchestra or combo ? You got it ! Record it and amaze your friends. It's a great way to find out just who your friends really are. And, who is not !

Sheet music is in abundance. A lot of it is not on CD. Some of it was out of production before the record player was invented. You have a way of playing it anyway.

And talk about inventing - that is my main interest in MIDI. I write songs, mostly a cappella (vocal). I try my songs on MIDI with instruments having the range of voices which will do the final performance. I can hear my songs without having to sing and record all the parts myself (which I often do). MIDI allows me to edit until I have my song just the way I want it.

The sequencer I use also has tape sync and SEMPTE (another subject). I have an an 8-channel recorder which allows me to record eight times with all recordings in sync - playing

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**If you use Tymnet,** call Tymnet Customer Support at 800-336-0149 for your local access number. Now dial your local Tymnet number; after the usual handshaking, you'll see a line of garbled characters (or a request for "terminal identifier"). Respond with a lowercase "a". Then you'll see a "please log in:" request, to which you should respond with "bix" and a carriage return. Next you'll see the prompt, "Name?"; enter "bix.mast" here and you'll begin registration.

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**If you dial directly,** respond to the log-in prompt with "bix" and enter "bix.mast" at the "Name?" prompt. Continue as with Tymnet.

to the same conductor, if you please. I record the strings on one track, the wood winds on another, the brass, percussion, reeds and bass on other tracks. When I play it back the entire orchestra plays. This is accomplished with two synthesizers, playing no more than six to eight instruments at a time.

Maybe you should not do MIDI. But, if you like to have fun with music, there is no other way you can have this much fun with a full orchestra from the confines of your own music room at home. So, do it !

## WHAT IS A SYNTHESIZER ?

A sine wave tone at any frequency is the most pure and undistorted sound we can make; it is much like a bird whistle, when given notes to play. Most instruments have some pure note characteristics. Only some. There is no musical instrument pleasing to the ear which produces sound in the purity of a sine wave. It is the characteristic distortions of an instrument that makes it sound like that instrument and none other.
The trick, then, is to electronically produce sound with the proper distortion and harmonic characteristics in order to sound like some instrument we know and love. Or, for that matter, once we learn to create the sounds of instruments found naturally, and understand the natural laws which govern those sounds, we can create by those rules of nature new sounds of instruments not yet devised by craftsmen. Ain't that exciting ?

The English prefixes "syn" and "sym" mean, simply, "together". The word "synthesis" is from the old Greek, meaning "to put together". One way to create distortion in sounds, otherwise pure, is to put two or more of them together with varying amplitudes and phase relationships - and you have the beginnings of a violin, guitar, or piano sound. Add to that control over the amplitude envelopes and it can be quite good.

To give even greater flexibility to the sound synthesis, each tone to be combined (operators) can be given a distortion. The easiest way to do this is to generate the tone in various wave forms (shapes). The most common such wave forms are sine wave (no distortion), square wave (rich in odd numbered harmonics), triangle or peaked wave (weak low-order odd harmonics), sawtooth (rich in both odd and even harmonics), and pulse shapes (harmonic content variable). By mixing the selected operators to various degree, many different sounds can be produced.

To take this process one step further, allow a low frequency operator (LFO), of one of these shapes, to determine the amplitude or frequency modulation of another (the carrier) at the desired note frequency. Add feedback so that the modulator can modulate itself to some degree. Now combine mixes of these signals in various combinations and you have the

synthesizers available today.

To make a new voice, select the manner in which you want the modulators, carriers and feedback loops to be interconnected (the algorithm). Set the desired range of control for each of the operator parameters, and which of the control functions to vary the operator effects, if any. Set output envelope shape parameters and which of the control functions will vary the envelope effects, if any. Then play....

## GLOSSARY

**After touch pressure** - The pressure placed on a key after the key is down. Often used to control tremolo or vibrato in the voice. Not all keyboards send after touch information; not all synthesizers respond to that information; not all sequencers will recognize it.

**Attack velocity (key)** - The rate, or how quickly, the key is pressed down. Generally used to control the volume, or loudness, of the tone when played. Not all keyboards send attack velocity; not all synthesizers respond to that information.

**Audio mixer** - A set of low-level amplifiers and gain controls (volumes) to combine a number of stereo inputs into one stereo amplifier and speaker system. Each input level may be adjusted separately and a master output level may be set for the signal to the amplifier. Meters may be provided for monitoring the output levels. Headphone jacks allow listening to the mixed result.

**Channel** - The "address" of a MIDI message. Each instrument voice can be set to one of sixteen MIDI channels so that only it receives the MIDI codes sent to it. See also, Omni.

**Control codes** - MIDI codes which duplicate the settings of the control devices of the keyboard such as the modulation wheel, pitch bend, foot switches and pedals, etc.

**Daughter** - The person who knows how to play a keyboard.

**Drum machine** - A special kind of sequencer which may be loaded with patterns to play drum sounds and rhythms. Very much like the rhythm sounds built into many of the low-end keyboards, except that you define the drum patterns before loading them into the machine. Performance of patterns and rhythms may be changed during play. In some machines you define the sound (type) of the drum.

**Editor** - The program, or function module of a sequencer, which allows viewing and changing of notes, attack velocity, duration, and other parameters of a song. The editor will generally be a part of the sequencer, and allow the entry of notes (writing the song) for performance, and possibly printing the song

score.

**Entremont, Philippe** - a French pianist with his own interpretation of Chopin, no better than my own - or yours.

**Envelope** - The shape of a note's output, or that of the operators which make up the note. Portions of the envelope may may be defined to control the sound response of the tone, and in part the timbre (tone quality) of the sound.

**Exclusive codes** - Codes not specifically defined by the MIDI standards, used by manufacturers to do things "their way". This is necessary because no two keyboards are exactly the same nor have the same features.

**Glissando** - A rapid slide up or down the musical scale. See also Portamento.

**Instrument (musical)** - Any of the instruments which produce musical sounds by MIDI, or generate the MIDI signals for control of other instruments. Some of the instruments which are now equipped to produce MIDI codes are keyboards, reed (wood), guitar, piano, and horn (brass).

**Key signature** - The sharps and flats symbols placed following the clef symbol on a musical staff. Each sharp or flat adjusts the natural pitch of the note indicated by one half-tone.

**Keyboard** - A musical instrument with keys similar to that of a piano, but used to generate the MIDI codes for performance of a song. Assumed to reproduce sound by synthesis or voice sampling and, thus, may not sound anything at all like a piano.

**Librarian** - A utility program, generally used with the sequencer, to load and store voice parameter setups for the synthesizer or sampler. As such, it allows new voices to be performed, as needed, by each song.

**Local features** - The sounds, rhythms, and chords which may be played on the keyboard (or other instrument) which do not generate MIDI codes for recording and play back.

**Measure (musical)** - The time duration between two bars of music as indicated by the time signature of the song. See also, Time signature.

**MIDI** - The interface standard for interconnecting musical instruments and related equipment. What these lessons are all about.

**MIDI IN** - The MIDI port the instrument "listens" on. If the MIDI code channel number matches the setting of the instrument voice, the instrument will perform by those codes received on the MIDI IN port.

*Part 3 (the remainder of the glossary) will appear in the February issue.*

## DISCLAIMER

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**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) or Jim Schulz (MAST) 533-4193

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# SPACE / MAST Newsletter
## January 1990

**SPACE** meeting:

  *12 January 1990*

**MAST** meeting:
  *19 January 1990*

  SPACE / MAST regular meetings are at the Falcon Heights Community
  Center, 2077 Larpenteur Avenue West (meetings start at 7:30 pm)

**MAST+ Programmers** Meeting:
  *Tuesday, 23 January 1990*

At First Minnesota Bank Building - second floor, Lexington and Larpenteur,
in back of building, 7:30 pm

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