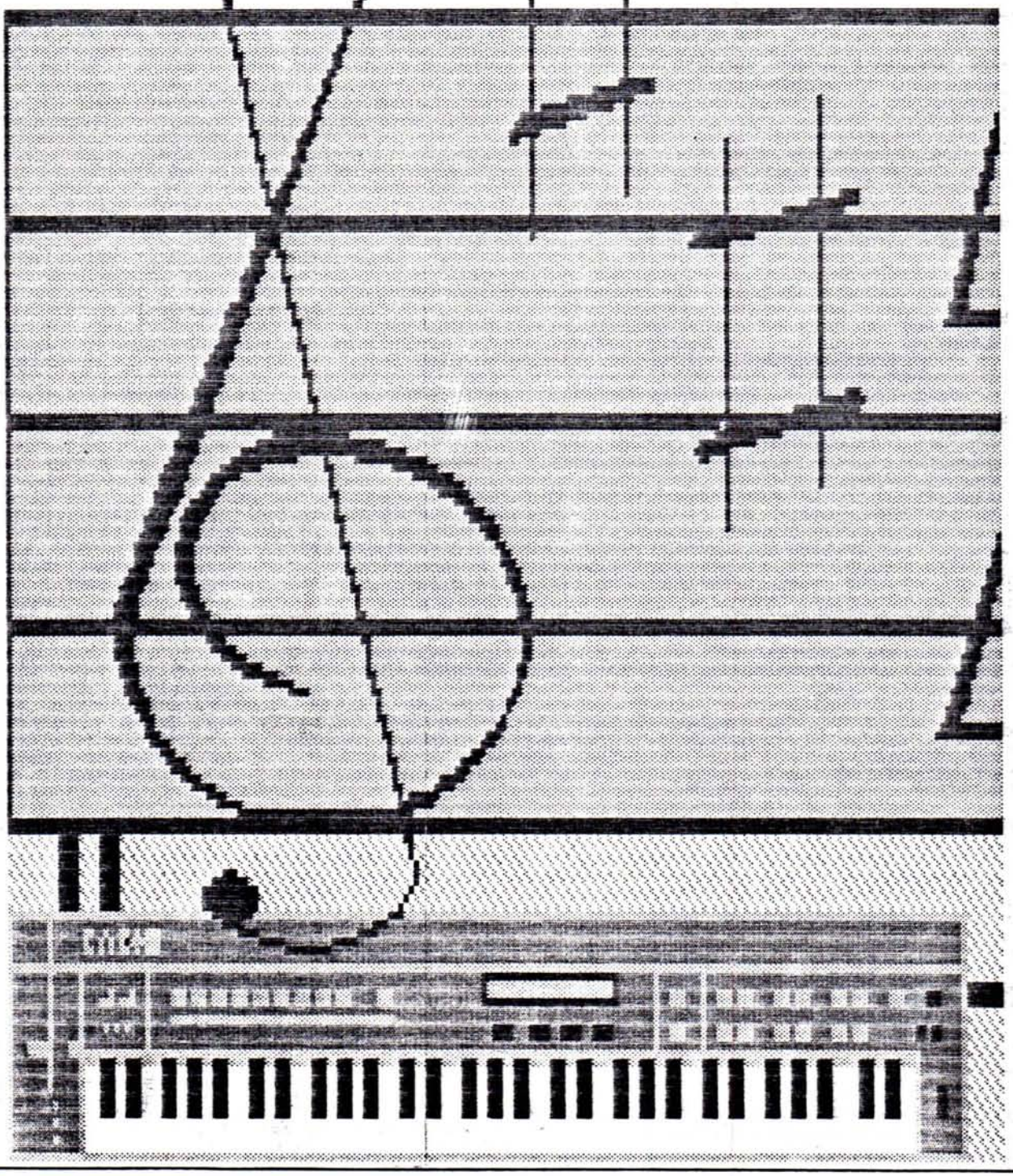
SLCC Journal

3/86

San Leandro Computer Club

MIDI-ATARI



Beginner's SIG

RICHARD STIEHL

NOW THAT IT IS PLUGGED IN...

If you consider yourself a beginner ATARI Computer User, then this is the place for you! Once a month the Beginner's SIG meets at the San Lorenzo public library.

A variety of subjects are discussed from "Booting" DOS, to connecting peripherals, to the ATARI computer itself, and how to utilize these effectively. We have even looked at and discussed certain software.

If you have any questions whether of a beginner's nature or otherwise, please come to the BEGINNER'S S.I.G. or you may feel free to call me at the following number during the day or evening: 835-9857. If I can't answer your question I will find someone who can.

Please see the CLUB CALENDAR for the date and time of the next meeting.

Software Exchange

TOM TISBY & RON DEVINE

WANTED: Users interested in trading their public-domain disks with the San Leandro Computer Club. Experience not required. All that is required however, is that you have some good new public-domain software. Individuals, national user groups, and international user groups may donate. All others can donate also too. REWARD: Free Floppy-Of-The-Month of your choice for each public-domain disk filled. If you like to participate, write for more information and/or send your disk(s) to:

Tom Tisby & Ronald Devine C/O
San Leandro Computer Club
P.O. Box 1525
San Leandro, CA 94579

Please mark "DO NOT FOLD" on your envelope.

SLCC Journal

The San Leandro Computer Club for Atari Microcomputers is an independent, non-profit organization and users' group with no connection to Atari Incorporated. Membership fees are $20 per year. Membership includes access to the computer library, subscription to the Journal, and classes when held. Permission to reprint articles in any non-commercial publication is permitted without written authorization, provided proper credit is given to the San Leandro Computer Club and the author. Opinions expressed are those of the author and do not necessarily represent the views of the S.L.C.C.

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JOURNAL SUBMISSIONS

The SLCC Journal will accept any articles written by members on any topic found pertinent to the club. We will accept articles in any form, although we would prefer articles be submitted on Atariwriter files. The following Atariwriter parameters are used:
B12 D1 G1 I5 J1 L10 R53 S2 T8 Y152

From the Editor's Desk

RON SEYMOUR AND TOM BENNETT

This has been one rough issue! We have been having a number of small setbacks this month. We are suprised we have even been able to get this issue out. We won't even bore you with all the details.

We hope that you at least got your issue on time since this is our first month using bulk rate mailing. The bulk rate mailing only costs us 12.5c versus 39c of first class, but we had to suffer with allowing at least 10 days to deliver it to you. Thus, we have had to push the deadline further up to the second Friday of the month. We hope this doesn't put a damper on our extensive submissions from the club (ha ha). Actually, this month has more club generated articles than most, and we thank you all.

We also seem to be getting more ST submissions, and they unfortunately take more time to edit (and even then we don't know if we have it exactly right). Program listings are dificult to interpret when editing do to the garbage characters we get when translating to Atariwriter plus. We would appreciate getting hard copy along with the disk files of the ST articles so that we can compare our results to the actual copy.

We have been seeing more and more emphasis towards the ST, but we are still predominantly an 8-bit systems club. In addition to the submissions of product reviews and hardware mods, we are interested in short program listings. Some utility listings and programming tips are always useful. An old magazine feature used to be Atari one liners, and we are issuing a challenge to you. Let's put together some Atari one liners for both the 8 and 16 bit machines. You can submit them to us in writing or upload them to the Key System. We will gladly print them.

Another feature we would be interested in is program listings or reviews from our younger members, that we can include in a "Kid's Page". Don't be bashful.

Next month is the April issue, and you know what that means.. the SLCC annual PARODY ISSUE! Your submissions will need to be received by March 14!

Hope to see you next meeting. And remember, you can bring us your submissions then.

Game Hints

TIM SNYDER

KARATEKA TIPS

If any of you out there are having problems getting to the next level in Karateka, this article is for YOU. If, on the other hand, you like to find things out for yourself then I suggest you stop reading this now.

While I plan to go over some of the trickier aspects of this game, I will not include a step by step procedure on how to complete the game.

1) The Gate (thank you Makoto Nagata!):

After you kill this last guard you must slowly walk over to the gate. After you're as close to the gate as possible, throw a punch or kick to let the gate down. After it closes, it will open again. When it reaches chin level, RUN underneath it.

2) Doors:

In order to get past the closed doors, just throw a high kick

3) The Eagles:

After kicking in the last door from 2), a bunch of eagles will come out one at a time. You must hit or kick each one in the head. Just back up to the middle of the room and keep punching. When the eagle enters high, throw continuous high punches. If the eagle enters low, throw low punches. Eventually you will kill off the last eagle.

4) THE MASTER:

This is the hardest part of the whole game. You must use a hit and run strategy on the master. If you kill him (and that's a BIG IF!!!) you will get to rescue the girl.

5) The Girl:

If you run to the girl, you will rescue her and the game is over. If you stalk her like a guard, she will kick you in the groin and the game is over.

Hope these tips help you out. I have to thank Makato Nagata for the tip dealing with the gate (hope I got your name right!). I learned how to complete this game through many hours of trial and error. I hope you won't have to now!

Secretary's Report

DAN CHUN AND JIM MORAN

San Leandro Computer Club
General Meeting
February 4, 1986
by Dan Chun

8:00 VP Jim Hood opens the meeting by welcoming everyone. We had a head count of 195 in attendenCE at the meeting. Jim announced the upcoming computer swap meets. California Computer Swap Meet on Feb. 23th in Hayward. Computer Supermarket on March 1st and 2nd in San Mateo. Golden Gate Shows Inc. on Feb. 8th and 9th at the Oakland Coliseum. Our club will be attending the Hayward and San Mateo Computer Swap meets. Our club bought a small black and white monitor for $ 40.00 to be used at the main meeting by guest speakers so their backs would not have to face the audience.

8:05 Tom Tisby and Ron Devine, our software chairmen, demonstrated the disk of the month. Ron explained that Tom does the front side of the disk and he does the back side of the disk for the Floppy-Of-The-Month. The February floppy on both sides of the disk showed off Atari's excellent graphics capabilities. Be sure to tell Ron and Tom how much you appreciate the good job they are doing with the special edition disk and the floppy of the month disk.

8:15 Dick Scott our program chairman introduces Mr. Neil Harris of Atari Corporations to a standing room crowd. Mr. Harris brought a few new programs to demonstrate and later to donate them to the club. Atari Corporation donated AtariWriter Plus, Atari MusicPainter. AtariWriter Plus will work on the 130XE, 65XE, 800XL, 800, and 1200 computers. Some of the neat features are proofreader, mail merge, and custom printer driver for non-Atari printers. If your proofreader crashes while verifying spelling words between blossom and bloomers Atari will replace this disk free of charge. Atari MusicPainter will allow you to create or compose your music by using a joystick. Atari Planetarium disk will let you view the sky at different times and dates of the year. It will let you view the sky as if you were looking through the earth. Neil also demonstrated the soon to be release Star Raiders II. He mentions that you now can buy a 130XE, 1050 Disk Drive and a 1027 printer as a package for $399. Atari has a new color monitor for the 8 bit machine price about $299.

ST News: TOS is now available in ROM. ST will be able to run MS DOS and CPM software. 20 Mega Bit Hard Drive under $800. The new 520ST with the RF modular soon to be in discount stores. Group buy on this model is possible. The 1040ST will be selling soon at computer stores.
Atari is still selling the 2600 and the 7800.
9:35 The usual break for software and hardware.
10:00 VP Ends the meeting by saying the club collected $61 on the raffle.
Executive meeting highlights. The person with a membership number of 500 will have a free membership for a year. Anyone who brings in a new member will receive a free floppy of the month of his or her choice. When you receive this news letter there will be a three line ad in the Daily Review and Oakland Tribune for memberships wanted. In the future when we have a standing room only problem we will ask non members to give up their seat to members. I would like to thank all the former members for renewing their membership. Do not get me wrong folks, money spent on the SLCC Journal is far less then what we would have to pay for an editor, assistant editor, and Journal staff. Keep up the good work.

ADDITIONAL MEETING NOTES
by Jim Moran

Chairman Jim Hood said that the first vote on the proposed new Constitution and Bylaws will take place tonight after the break. He said that the long awaited "ULTIMA IV" is available at Home Computing stores. He also mentioned that Dan Chun has the 825 printer graphics conversion for $30.

The club has bought a small monitor to be used at the podium so speakers can follow their demonstrations.

Following the announcements the co-chairmen of the software committee gave a demonstration of the disk of the month. The disk includes a graph program which allows you to set the parameters of the graph very simply, several sound demo's, a game to test your hand eye coordination and the two ATARI CES "FUJI" demo's, which are terrific.

Neil Harris, the Editor of Atari Explorer started out showing three of the newest software programs from ATARI for the eight bit machines, "SILENT BUTLER" a home bookkeeping program, "MUSIC PAINTER" a program that allows you to make music using a joystick, "ATARIWRITER PLUS" the updated word processor. After short explanations of these programs Neil donated a copy of each to the club to use for their raffle prizes.

Neil also brought us up to date with these other points from ATARI;

They have been working on an 80 column interface that will have a printer

interface (preliminary only).

520 ST ROM chips are ready and are being mailed now. The cost of these chips, for those who do not have a free set coming, will be about $25.

"STAR RAIDERS II" ,which Neil showed a demo of, (great graphics) is about six weeks from the stores. STAR RAIDERS for the 520 ST is in the works now.

"ATARI PLANETARIUM" a fantastic program which shows views of the sky from any point on earth and allows you to select the date of the view from any time within 10,000 years of now, was the next program presented. Screen dumps may be made of any of the sky views. The program will be ready March 1st and will cost $29.95.

There is a prototype of a new 3 1/2" disk drive for the 8 bit machines now at ATARI, the software, similar to DOS 2.5 is still working. Neil stated that there was considerable doubt that this drive would be released, due to compatibility and also the feeling that it would not sell well enough.

The 8 bit 80 column monitor is gone. But there is a 40 column monitor in the works.

Only the XMM801 printer is likely to be made for the 8 bit machines.

There is not now and never has been a 1200 baud modem planned for the 8 bit machines.

MS DOS is in the works for the ST machines. This is a software and hardware package that will cost around $200. MS DOS for the ST will run faster than on the IBM PC.

No hard disk is planned for the 8 bit machines.

The game "EXCALIBER" by Chris Crawford is not planned for normal release. There is a possibility that it will be put up as a download on one of the big BBS's with a fee of $10 to download it.

The 7800 game machine will be released on April 1st. Cost between $80 - $90 dollars. The graphics will be better than those on the 5200 game machine.

They are still working out some bugs in the hard disk software for the ST's. The drives are ready so they should be released soon.

The new 520 ST's will have an RF modulator so they can use a TV for a screen.

1040 ST's which are on the way now are also fit with an RF modulator. TV screens will be ok for low res and 40 column but pretty bad for 80 column.

A 1040 ST will be on the cover of the next BYTE magazine to be out in about three weeks.

Multi tasking for the ST is very iffy. Some question on need or desire.

After all this Neil closed with the news that ATARI did not have a User Group representative since Dave Duberman left six weeks ago. ATARI is taking applications now. Neil also suggested that we all write or call our congressmen, and tell them to keep their hands off the space program. It seems there is a lot of talk since the shuttle accident. We should all remember that almost all small electronics (such as ATARI computers) are a direct spin off of the space program.

The final order of business for the night was the first vote on the proposed new Constitution and Bylaws. A motion was made and seconded to accept the new changes. After a short wait for comments the vote was taken. The vote appeared to be unanimous.

All members were advised that at next months regular meeting we would have final discussion and voting on these changes.

Our Next Meeting

DICK SCOTT

THE MARCH MEETING

The March Meeting will feature LEE ACTOR and GARY LEVENBERG from Synthetic Software Systems. Lee is the author of the "ADVANCED MUSIC SYSTEMS" (AMS and AMS2) and the "MIDI MUSIC SYSTEM" (MMS) programs. (Note: Please see the reviews on the "MIDI MUSIC SYSTEM" along with a profile on Lee and Gary elswhere in the SLCC JOURNAL.) Richard Greene (a professional arranger, nomintate for a Grammy last year for best arrangement with this album "The Bobs") and Jessie Osborne (a professional engineer) will also be coming.

There will be programs available at a discount at the meeting, so bring your checkbook along with you. The MMS that lists for $69.95 will be sold for $55.00 plus tax, and the Midi-Mate (midi-interface only) will be sold at a discount from its $199.00 list.

I want to express my thanks Mr. Neil Harris and ATARI CORP. for the donation of the the three (3) programs to the club. Also, I would like to correct the record at this time, Mr. Walden donated two (2) programs to the club, not just one as reported in your news letter.

Be seeing you there!

Notes On Midi

RICHARD KALLER
REDWOOD ATARI GROUP

THE POWER OF MIDI

MIDI stands for Musical Instrument Digital Interface. It is a standard, covering both hardware and software, agreed upon and designed by musical instrument manufacturers so that instruments such as synthesizers and drum machines could talk with each other. Because these MIDI-equipped instruments are really computers, dedicated to music but still computers, MIDI allows the instruments to talk with personal computers as well.

If you're a musician, this means your computer can function as a multi-track recording setup for -equipped instruments in a small space at home, duplicating most of the functions of a commercial tape recorder, like autolocate, punch-in and punch-out, overdubbing, and track bouncing. MIDI memorizes sequences of note-on and note-off commands instead of audio signals quantitized to digital data.

To play what you have recorded, you simply reverse the flow of data with the computer feeding the information back to the voices in the synthesizer or drum machine, rather than driving an audio signal through a conventional stereo system. Capable of sending parts addressed to 16 different channels over one cable, you can play back in real-time as many parts as you have separately assignable voices.

After recording, you can edit the music in much of the same manner as a word processor lets you manipulate text. Repeat a phrase here, cut out a note there, even change the tempo or transpose the key. These things aren't easily done on tape. Editing functions are also extremely useful in creating and maintaining patch libraries (blocks of data that define the tonal qualities of notes, as opposed to their pitch).

Hard copy is a breeze. A graphics printer can give you instant sheet music, complete with all the latest edits you've made. No more time spent copying music notation by hand. No more trying to remember just what notes you played during that improvised solo everybody loved. And you get accurate, high speed, easy access, massive storage for all MIDI data on disk. I think we are all familiar with the trials and tribulations of using cassette recorders for program and data storage.

If you're not a musician but always wanted to be, MIDI releases the tutorial abilities of computers to benefit young and old alike. A computer never gets grumpy having to correct beginner's mistakes and is discerning enough to catch any mis-struck notes or slight fluctuations in tempo. Even if you can't play a lick, most MIDI recording software allows you to enter notes step-by-step to be played back in real-time (editor's note: See MMS review elsewhere in this issue). This is a slow, but valuable for correcting timing errors. If you just want to sit back and listen, there are floppy disks of prerecorded music, boot it up and voila! your own personal MUZAK! Now we can all be composer, conductor, performer and audience rolled into one.

For those who can't carry a tune in a bucket and don't want to, MIDI can be used to direct much more than music. Remember I said that MIDI doesn't use converted audio signals? MIDI code uses some nibbles (half-bytes) to define channels, a few more to turn notes on and off or modulate a patch parameter, and small blocks, maybe 16 or 32 bytes long, to simultaneously change all parameters. If you substitute "events" for "notes" and "control panel settings" for "patches", it becomes clear that MIDI could turn on and off any properly equipped device, or make adjustments to its controls. It is already being used to control stage lighting during performances. If MIDI can light up a stage, why not your home (or workplace)? Being a computer, it could turn lights on and off according to a schedule or in response to an external event (darkness outside, entering a room, etc.) And if you can control lighting, why not heating, air conditioning, watering, security, home appliances? The limits are only in our imaginations, and we will be the ones to say where we will go with the power of MIDI.

MIDI is currently available for 6502-based Atari computers as MIDIMATE(tm), an end-of-chain serial port interface, made by Hybrid Arts(tm). The Atari STs have MIDI built in. For more information, you can contact me at (707) 823-9687 or write to 10300 Mill Station Road, Sebastopol, CA 95472.

Midi Program Info

SYNTHETIC SOFTWARE

NEW RELEASE--MIDI MUSIC SYSTEM

Synthetic Software and Hybrid Arts are pleased to announce the release of the MIDI Music System written by Lee Actor. MMS is a compositional tool designed for the professional musician, amateur musician, or hobbyist. Control all MIDI synthesizers or drum machines with an Atari 400/800/1200, XL, or XE series computer and a Hybrid Arts MidiMate interface.

Much like a word processor, MMS is a

music processor. Music is entered through the Atari's alphanumeric keyboard, or from a MIDI keyboard. Enter and edit musical notes, send MIDI commands, transpose, create phrases, change tempo and much more. Three voices are displayed simultaneously and can be accessed with the ease and speed of a spreadsheet program.

The philosophy and style of MMS began with the Advanced Music System written in 1982 by Lee Actor for the Atari Program Exchange. To this day, AMS and AMS II files are some of the most prevalent files found on many Atari bulletin boards.

* Interactive Music Editor (step input) allowing immediate playback by measure, voice or entire piece.
* Word processor style of entering and editing: Insert, Delete, Undelete, Cut and Paste, and merging of data.
* 99 voices (monophonic tracks) are available for entering and editing music.
* Assign each of the independent output voices (voices 1-20) to transmit simultaneously to any of 16 MIDI channels.
* Supports four MIDI Channel Modes (OMNI on and off, Poly or Mono).
* MIDI configurations can be saved to disk and automatically loaded with music file.
* Loop around any designated segment of a voice, or an entire voice, with no extra memory required. Repeat any number of times.
* Any voice can be used as a phrase by any other voice, or saved for later use.
* Total capacity is nearly 8,000 notes.
* Phrases and repeat loops greatly extend note capacity and can be nested 10 levels deep.
* Enter notes in Music Editor directly from synthesizer keyboard.
* Toggle MIDI keyboard input on/off.
* Enter and independently edit on each voice: pitch-bend, program change, velocity, modulation wheel, and channel assignments
* Pitch Wheel control using rate of change (only two commands stored--no needless waste of valuable memory space).
* Sophisticated control of tempo: change tempo anywhere in the music, or program a rubato tempo (one that varies gradually by specifying the rate of change).
* Transpose any segment of a voice, or an entire voice, from one semitone to ten octaves.
* Enter durations as standard notation (including double-dotted notes, triplets, quintuplets, etc.) or as clocks (resolution of 1/48th of a quarter note).
* Cross rhythms and polyrhythms easily entered.
* Automatic beat counting to indicate measures not conforming to meter.
* Any sequencer can be controlled by MMS! A MIDI clock is sent while music is playing (the rate is controlled by tempo). A sync pulse (24 ppq) is also sent via joystick port 2 to control drum machines.
* Any three of 99 voices displayed simultaneously while entering or editing music.
* Spreadsheet like access: scroll through a voice (by single note or measure) or across voices. Display any measure of any voice immediately. Faster access than any Atari spreadsheet program.
* Visual display of notes during playback on piano-style keyboards.
* Mute voices on/off during playback.
* Supports many special MIDI commands.
* On-line help is available for all commands!
* Type ahead with no loss of keystrokes.

PRICE: $69.95
MEMORY: 48K RAM

ABOUT SYNTHETIC SOFTWARE

Synthetic Software is a newly formed company focusing on music software for MIDI applications. The first product is the MIDI Music System (MMS), an interactive music editor for Atari computers. The two founding members are Lee Actor and Gary Levenberg.

Lee Actor began playing violin at the age of 7. While earning both an B.S. and M.E. in Electrical Engineering, he played as a professional violinist from 1972 to 1978.

His musical career encompassed performances with symphony orchestras, opera companies, chamber music ensembles, and pop music groups. He also recorded professionally, conducted several concerts, and he was assistant conductor at MIT and San JOse State University. In 1981, he received his M.A. in music composition.

With an engineering background in digital signal processing, and experience working as an engineer, Mr. Actor became very interested in home computers. Desiring a music composing tool to help him perform intricate cross rhythms and polyrhythms, he wrote the Advanced Music System (AMS) for the Atari Program Exchange.

This lead to a number of video game projects, including Bally Sente's Hat Trick, one of 1985's most successful coin-op games. While at Bally Sente, Mr. Actor also developed the Turbo Music System, a further development of AMS for in-house music composition and sound design using a Sequential Circuits sound board.

Mr. Actor's experience as a musician, composer, engineer, and software designer add up to the ideal background for the author of computer software for music applications.

Gary Levenberg has been involved with computers and music since 1970. While attending Indiana University, he was part of a small group responsible for establishing a computer music system for sound generation, composition and music printing. This system was the one of the most comprehensive networks of its kind.

While studying with composer Iannis Xenakis, he received a Masters Degree in Computer Music. His major area of interest was FM synthesis. This is a sound generation technique developed by John Chowning. FM became the basis for the Yamaha sound chips used in the DX-7 synthesizer and Atari coin-op games.

The 1976 National Computer Conference in Anaheim was the site of a Presentation in Sound and Light, a NCC special event involving computer-controlled laser displays and computer music. This success led to many years of touring the Soleil Laser Fantasia, an intricate entertainment system utilizing computers and lasers.

While producing both the visual display and music, Mr. Levenberg experimented with such music systems as the Fairlight Computer Musical Instrument (CMI). The CMI was one of the early music systems capable of sampling sounds, editing the waveforms of those sounds, and playing the results on a keyboard or with a compositional language.

Other strong experience is with Sequential Circuits sound generation equipment and its use in coin-op video games.

The culmination of Mr. Levenberg's expertise is the understanding of the electronic medium in music and how to effectively deal with this hardware through intelligent software systems, both for the professional and the consumer.

Midi Software Review

MIKE DAVIS
ATARI BOOSTERS LEAGUE EAST

MIDI MUSIC SYSTEM

I was very fortunate to be a beta test site for Lee Actor's "MIDI Music System". Lee Actor, of course, is the genius who brought us the popular Advanced Music System (AMS). His new system, MMS, works on the ATARI 8-bit computers with a MIDI (Musical Instrument Digital Interface). This article briefly decribes the fabulous MIDI Music System which is available now to ABLE members in a special group buy from the author for $55.

First off let's start with hardware requirements. An Atari 800, 800XL, or 130XE computer with 810 or 1050 disk drive. Also a Hybrid Arts "Midimate" interface ($199.95) or other MIDI interface and at least one Midi-compatible synthesizer or organ ($300-$2000). And let's not forget an audio amplifier and speakers for the synthesizer's audio output. As you can see this isn't one of the cheapest computer applications, but with a few synths and a good drum machine it will be a most impressive application.

I'll not spend time right now explaining the MIDI standard which was covered in a previous newsletter anyway. Instead, I'll explain the capabilities of this new software.

In keeping with AMS (Advanced Music System) tradition, Lee uses the term voice as being a monophonic musical phrase (i.e. one note at a time). In AMS, you had 4 voices; one for each sound generator in the Atari 8-bit computer line. In MMS, you have 99 voices with the first 20 being outputable.

Now wait a minute! If only the first 20 are able to output, then what good are the last 79?

Well unlike AMS, in MMS you can JUMP and RETURN from other voices. For example, I usually put note data for song intro voices in voices 21-29. Then in voices 31-39 would be the verse part of the song. Voices 41-49 would be the chorus part. Voices 51-59 might be the first ending of the song. Voices 61-69 would be the second ending of the song. This would continue as necessary. As you can see I have nothing in the first 20 voices at this time. Oh, before I forget, I usually reserve voice 30,40,50,60,etc. for resting out that part. In other words, say that the verse part (31-39) is 16 measures long. I would have voice 30 be 16 measures of rests. The reason for this is to allow some instruments to be sort of "turned-off" during this time.

Back to the story. Here we have all sorts of note data in the last 79 voices but none in the first 20 voices. In voice 1, I would set the tempo then jump to 21 then jump to 31 then jump to 41 and etc. At the end of each voice (21, 31, 41, etc) there would be a RETURN. So as you can see, the last 79 voices makes this very powerful for arranging.

The editing scheme and menus are very similar to AMS and over an hour of music can be stored on one SSSD disk; much more than with the Hybrid Arts system. During playback, two five and a half octive keyboards are displayed (similar to the one keyboard of AMS) each showing up to six notes in different colors. A total of of 12 multicolored voices dynamically displaying your music. Very nice.

The major capabilities of MMS are as follows:

1. Full tempo control. (Either absolute or relative tempo changes.)

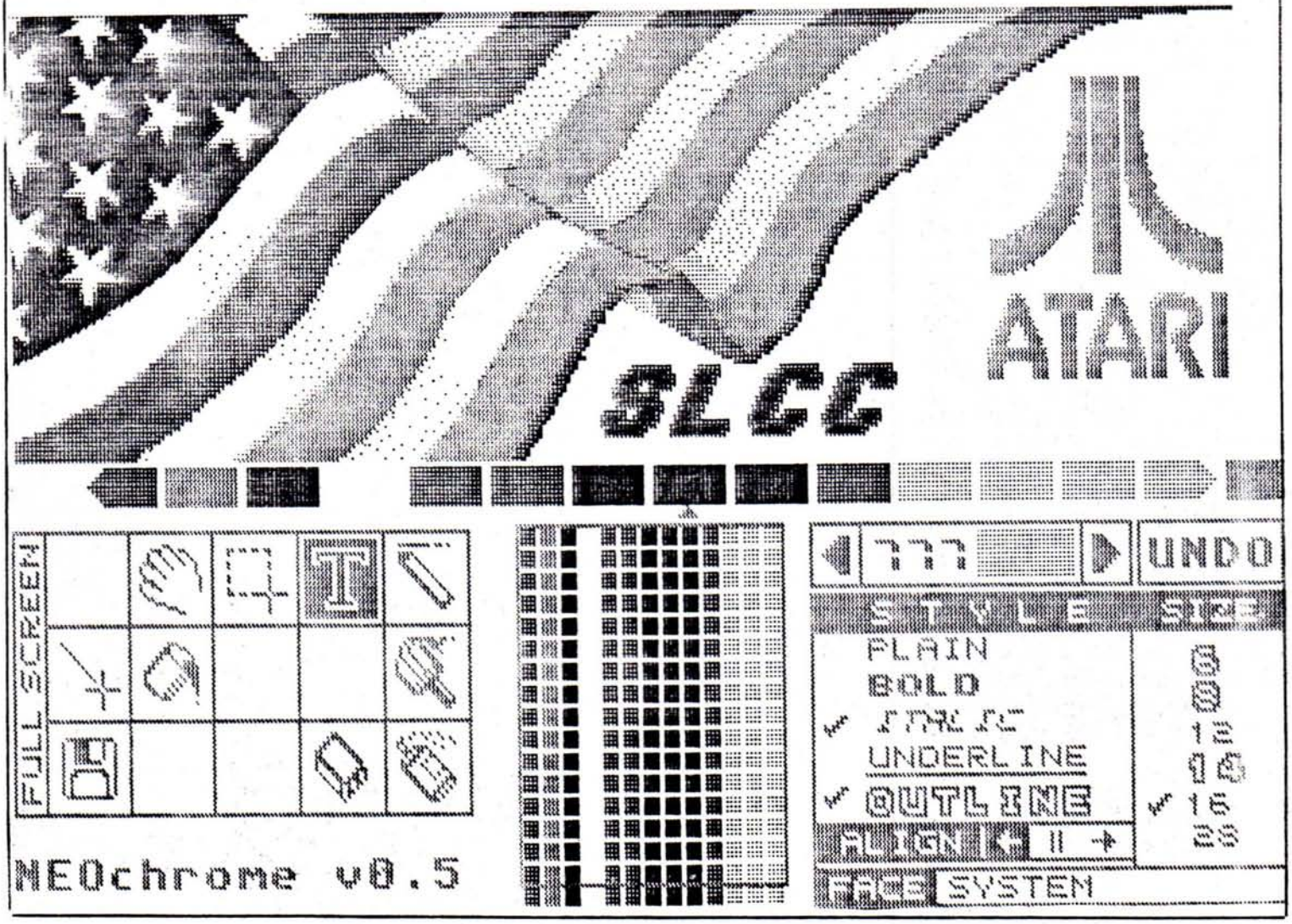
2. Cut & Paste editting.
3. Electronic spreadsheet-type display for voices with individual column cursors. (No more having to go to a main menu and then to another voice.)
4. Note values can be entered from computer or music keyboard. (Durations are from computer keyboard only.)
5. Key signature same as AMS. (You don't have to worry about Sharps or Flats this way.)
6. Repeat capability. (Either notes, measures, or even voices up to 10 levels deep.)
7. Jump and Return. (Nesting up to 10 levels deep.)
8. Synthesizer sound (patch) selection. (Within your song have your synth change from sound #3 to say sound #14.)
9. Full Midi channel control. (Can change Midi channels even within a music phrase of a voice.)
10. Directly send Midi parameter data. (Like pitch bend, mod wheel, etc)
11. Transpose up of down by 0-127 semitones (Half notes).
12. Full velocity control either absolute or relative. (for synths that have midi velocity sensing and response.)
13. Omni, Poly, Mono mode commands can be sent.
14. Joystick can be used during playback to control tempo.
15. Voices can be turned on and off actively during playback to help locate dissonant notes.

Another important program in the MMS package allows for translating AMS I and AMS II music.

*** SLCC MIDI NOTES ***

The Key System BBS, the official BBS of the SLCC, now has a new message base called "THE DISK JOCKEY" that is devoted to Atari computers and music. Here you can get updates on the latest MIDI developments for Atari 8 and 16 bit computers. This base is devoted to the following software systems: AMS and AMS2, MMS, Hybrid Arts MidiTrack files and patches, Music Construction Set, Pokey Player, Atari Music Composer, and any other Atari music software.

Call the Key System BBS at (415) 352-5528 and "*GO Z 7" to the Disk Jockey for more details.



Hardware Mod

SCOTT PETERSON

THE 130XE/320K UPGRADE

After both reading and building both the 800/288K upgrade (D.G.Byrd), and the 800XL/256K upgrade (C.Buchholz), I decided that there also had to be a way to upgrade the 130XE. There is, and thanks to the "Freddie" chip (C061991) this modification is much easier to do than either of the other upgrades.

To do the upgrade you will need a soldering iron, de-soldering tool, and some fine wire. See the parts list for the chips needed.

First, remove both the case and the metal shield to get down to the mother-board. Then remove the eight ram-chip U26 thru U33(MT4264). They are the row closest to the TV RF module. Next, install Z2 thru Z9 in the place of U23 thru U33. These are the 256K ram-chips. You can solder them to the mother board, or use sockets. Now take a piece of wire approx. 12 in. long and run a jumper from pin one on each of the 256K ram-chips to the next. After you do this the wire will be connected to pin 1 on Z2 thru Z9 and you should have about 6 inches left over. Do this on the rear of the mother board and then snake the wire thru the large hole near the ram chips.

Next, desolder and remove U23 (C014795), and replace it with a 40 pin socket. Bend up pins 15 and 16 on U23 and insert it in the socket you just installed. Take Z1 (74LS158) and bend up all the pins on it except pins 8 and 16. Put this "piggy-back" on top of U20 (HD14050) and solder pins 8 and 16 of Z1 to pins 8 and 16 on U20. Now solder a short jumper from pin 15 on Z1 to pin 8 of Z1.

Now, take a piece of wire about 4 in. long solder one end to pin 30 on the chip marked "C014805" on the mother board, and the other to pin 1 on Z1. Next solder a wire to pin 15(one of the two you bent out) of U23 and connect the other end to pin 2 on Z1. Solder a wire to pin 16 on U23 and connect the other end to pin 3 on Z1.

Take R1 (33 ohm) and trim the leads to about 1/4 in. Take the wire you connected to pin one on the 256K ram-chips and solder it to one end of R1, solder the other end of R1 to pin 4 on Z1. Re-assemble the RF shield and case and you are finished.

PARTS LIST

Z1	74LS158(2 to 1 Multiplexer)
Z2-Z9	41256 dynamic RAM(150ns)
R1	33 ohm 1/4 watt resistor.
	1 40 pin socket.
	8 16 pin sockets(optional).

The next page is a quick over view of the bit table and numbers to be used in location 54017 (PORTB). I have finished modifying a ramdisk handler for the extra ram. It uses a ram based OS so basic XE or XL can't be used. At present the best deal for this mod. is to use MYDOS 4.0. This supports a very large single density ramdisk. With basic XE you can use a 1500 sector ramdisk and without it you can have about 2000 sectors.

This upgrade has been built and tested on a BBS, it has run for days on end without a memory loss or error. If you need help or more information feel free to call the Peanut Gallery (408)-384-3906. 24HR, 300/1200 Baud. Leave mail to the Sysop(thats me). Good luck and let me know if you write a better handler.

Memory Control Register 54017($D301)
130XE/320K

```
Bit 7 6 5 4 3 2 1 0
    D a b C c d B R
D=0 enable diagnostic ROM.
B=0 enable BASIC ROM.
R=1 enable OS ROM.
C=0 enable extended RAM.
abcd= memory control bits.
```

Bank #	Control#	
Bank 0	->131	
Bank 1	->135	
Bank 2	->139	
Bank 3	->143	
Bank 4	->163	Basic= off
Bank 5	->167	OS = on
Bank 6	->171	ENH = on
Bank 7	->175	
Bank 8	->195	
Bank 9	->199	
Bank 10	->203	
Bank 11	->207	
Bank 12	->227 <---	
Bank 13	->231	-
Bank 14	->235	- 130XE Banks
Bank 15	->239 <---	

If you are using MYDOS 3.016 and wish to use Basic XE and a ram-disk at the same time, boot DOS and poke 5275,163 and 5324,16. Go to DOS and write the new DOS. This will keep the two from "bumping" into each other. A similar poke can be done to DOS 2.5, it is poke 4838,163. The handler I have will set up 192K of the extra ram as 2 SD ramdisks or 1 DD ramdisk.

If you are a hot-shot programmer(Im not) I think a print spooler that uses part of this ram would also be very nice. This mod is easy to do and perfect for running a BBS. One note, on Compuserve there is a mod by Rich Andrews which should not be confused with this one, his uses 33 new chips and mine uses 9 new chips. Have fun.

Hardware Mod

RICH ANDREWS
FROM SIG-ATARI AND PACUS REPORT

THE ATARI 130XE MEMORY UPGRADE

The Atari 130XE lends itself to memory increases quite easily. For those who may care, the Freddie chip (Part # C061991-29) has been around for a while. Remember the 1400 and 1450XL computers? These machines used Freddie also. Freddie is used for multiplexing the address's for the RAM chips and provides system timing. The chip that does all of the actual work in providing for the memory management is the custom chip next to Freddie. (Part # C025953) This chip takes it's input's from th 6520 PIA and from Antic for CAS, RAS, etc. The pin that we are concerned with is pin 14 (CASBANK).

Technical Overview

Now for the good part. If we redirect the output of pin 14 of the C025953 to another bank of 64K ram chips we can, via software, select any one of 8 banks of 64K. In this configuration one would have a maximum of 589,815 bytes of memory. The only disadvantage of this is the fact that under these constraints the hardware becomes more complex and the software to drive it does too. I recommend that for general purposes the 130XE be upgraded to a maximum of 320K. It gives the user sufficient "horsepower" and yet at the same time the software does not become too intense. Now for the bad news. To implement the 320K mod one has to remove the internal basic ROM which really isn't that bad because most users are using Basic XL/XE anyway. The reason for this is quite good. That bit is required for the addressing of the extra bank(s) of memory. Actually one could use the Self-test bit but that requires additional hardware or a reburn of the O.S. ROM. More on that later.

The Mod

What we will do is to wire up a 74LS138 to the 6520 PIA and to pin 14 of the C025953. The 74138 can be best described as a routing switch. The data that we want to re-direct is presented at pin 4 of the 138 and the data output is pins 15, 14, 13 and 12. The pins that tell the chip to what bank to directs it's output to are pins 1, 2, and 3. Now for the installation.

1) Take 24 64K x 1 RAM chips and bend out pin 15 on all of them. Pin 15 is the CAS line.
2) Solder these chips onto the existing RAM chips in the 130. Do not solder anything to pin 15 yet! For ease of servicing and soldering I staggered these new RAM chips onto the existing ones. I recommend this highly. When you has completed soldering in each new bank take a piece of insulated wire and solder this wire to pin 15 of each new RAM chip. Wire wrap wire works nicely for this. Continue with this process until all 3 additional banks are wired.
3) Just to the right of Freddie is an area to solder in a 14 pin IC chip. We will use this area to supply +5 and ground to our 74138. Take a 74LS138 and bend out all of the pins except pins 8 and 16. Solder pins 8 and 16 into the holes of the unused chip area next to Freddie.
4) Next to the RAM chips is the chip with the part # of C025953. Behind the chip are two 33 ohm resistors. (orange, orange, black, gold) Unsolder the right-most lead of the rear resistor (R111). Solder a wire from the free end of the resistor to PIN 15 of the 74138. Solder another wire from the land where the resistor used to go to pin 4 of the 74138.
5) Solder two wires from pins 11 and 16 of the 6520 PIA chip (Part # C014795-12) to pins 1 and 2 of the 74138. Also ground pins 3 and 5 of the 74138.
6) Solder the CAS line from each new bank of 64K to pins 14, 13, and 12 of the 74138.
7) Unsolder the Basic ROM chip from the board. This is the 24 pin chip that is located closest to the front of the machine just to the left of the 555 timer IC. Thats it.

Conclusion and Tech notes:

To test each bank boot with DOS 2.5 with your basic cartridge, POKE 5439,49, set the appropriate PIA port bit, go to DOS and reformat D8. Continue through all the banks and check your directory. If you write a file to one bank, switch banks, and write another file, you will not lose what you wrote to the first. The real advantage is that you can have your ramdisk and Basic XE too. Around the bbs's here in Chicago there is a file floating around called RAMDISK2. The source code is available on COMPUSERVE. By re-writing the routine you can have your ramdisk invisible to Basic XE and/or double density.

I mentioned previously about using the Self-test bit in the PIA port. To use this bit you have to disconnct the line on the PIA that runs to the PAL MMU and connect it to a 556 timer that will enable the self-test input to the PAL for about 3-5 seconds. Half of the timer is used for timing and the other half is used as an inverter. The reason for using a timer is that on boot-up the OS uses some of the routines in the self test to check for valid RAM and to determine RAM size. I have done this and then pulled the circuit out. It was just too "messy" to suit me.

One potential problem is the 555 timer

used in the 130. This chip is used for system reset timing. If you press your system reset key down and hold it there the system should not reset. If it does you will notice that if you release it the system will reset again. The reason for this is because the 555 timer is putting out a spike that the system sees as a valid reset. To solve the problem replace the chip. It seems about 1 in 10 are bad.

That's it! Hope you enjoy the mod.

Rich Andrews
Box 229-1 RR#7
Lockport, Il 60441

Educating With Atari

DIRK KAGERBAUER
PACUS REPORT

EDUCATIONALLY SPEAKING . . .

Problem Solving is an activity each of us engage in all the time. It begins when we are confronted with a situation that places an obstacle between us and something we want. Problems can be specific and well-defined, or they can be general and unclear. Sometimes the problems we face are those we create ourselves for our own "enjoyment", such as games, puzzles, entering into new situations, or undertaking new activities.

The ability to solve problems is an important skill, one that needs to be developed by direct teaching and/or lots of practice. In school, development of problem solving skills takes place in many different subjects under many different names. In science, it's called "discovery learning". In math, it's employed in story problems and "real-world" applications.

As a school subject in itself, problem solving is just beginning to emerge on the educational scene. Fortunately, while educators debate among themselves as to the best way to "teach" problem solving, computer software has been published that promotes the development of problem solving skills. The Pond, The Factory, and The Incredible Laboratory by Sunburst, and Moptown Parade and Moptown Hotel by The Learning Company, are all programs that are designed to provide students with the kind of practice necessary for the development of problem solving strategies.

When selecting "problem-solving" software for children, keep in mind that in order for a situation (real or computer simulated) to challenge a child's problem solving ability, it must first present a problem the individual wants to find a solution for. Second, the way to get to the problem's solution must not be immediately known. Therefore, the software you choose must present a situation interesting enough to motivate your child to search for a solution. The situation must also be unique within the realm of your child's computer experiences.

One word of caution when working with software that truly provides the kind of practice necessary to develop problem solving strategies in your children. They will be confronted with problem situations they've never before met, given no clues as to how the problem is to be solved, and provided with no indication as to how much time and effort will be required on their part to find the solution. Sounds like fun, doesn't it?

. . . Atari 520 ST computers will be used as workstations to deliver Unix-based educational software through superminicomputers sold by Computer Curriculum Corp.

. . . CBS Software, a producer of software for Atari computers, has discontinued publishing consumer software. CBS Interactive Learning will sell many existing CBS software titles. But, many discontinued CBS software titles can be found selling for $10 or less.

. . . Look for the release of a 20 megabyte hard disk drive for the 520 ST by early March. Price: $699.

. . . The Factory (Grades 4 - 9), published by Sunburst Communications, focuses on several strategies used in problem solving - working backwards, analyzing a process, determining a sequence, and applying creativity. The underlying objective of The Factory is to discover what each of the three factory machines (punch, rotate, and stripe) can do, and then arrange them in the proper sequence to replicate a product.

The first level of the program, Test A Machine, allows students to try each machine to see the effect it has on the raw material, a square. Each of the three machines have different variations students can experiment with.

Opportunity for creative expression is provided in the second level of the program, Build A Factory. Here students can arrange the three machines in different combinations to vary the appearance of their final product.

In the third level, Make A Product, students are shown a square that has been "worked on" by several machines. They must then work backwards to determine what machines were used to construct the product and in what order they were arranged. After students have sequenced their machines, a square is run through the assembly line and

the final product is judged as a perfect copy of the original or as being flawed. If the product is flawed (not a perfect copy of the original), students are given the opportunity to rearrange the sequence of the machines and try again.

The Factory does a fine job promoting the development of the problem-solving strategies it is designed to. The graphics, animation, and sound associated with each of the three machines helps to make the program entertaining as well as educational.

The documentation that comes with the program does a nice job introducing the program and explaining how each of its three parts works. An added bonus for teachers is a page containing a list of suggested classroom uses for The Factory.

The one complaint I have with the program is the inability to select the level of complexity of the product to be replicated in the third part of the program, Make A Product. The products that students must produce in this part of the program are selected at random. This can result in a lot of frustration and a quick end to the program's use if one of the more complicated configurations is presented for duplication before a child is ready to handle it.

Overall, I'd recommend The Factory to anyone looking for a way to provide students in the fourth through ninth grades with practice utilizing problem solving strategies and techniques. It is available from Sunburst Communications, Inc., 39 Washington Ave., Pleasantville, New York 10570 for about $50.00.

New BBS SIG

MIKE SAWLEY

BBS SIG

I suppose it is high time that I started a BBS/Telecom SIG seeing as how I have our BBS sitting here. I don't really have a long range direction in mind. I suppose a lot of those interested in attending will need help in using the BBS, but that should not limit the topics that can be covered. Most anything that is related to telecommunications can be taken up. If you have a topic that you'd like to talk over at a meeting, you might want to leave a message on the BBS so I can do a little something to prepare. Hey! I might even get some help with operateing the BBS from those attending the meetings!

The meetings will be scheduled for the third Tuesday of each month starting in March. We will want to begin by about 8:00 PM.

Those of you that have RSysop access will want to attend the first meeting as we will go over the related commands!

Guest Comment

L.J. SILVER

DE RE PIRACY

Confessions of a pirate

(EDITOR'S NOTES: The following was uploaded to the Key System BBS.)

Piracy must be eliminated now, or more companies will go down, programming talent will be lost and fewer people will want to enter the software industry if it cannot provide worthwhile employment. Piracy can be stopped, or at least diminished, and in this article I hope to point everyone concerned in the right direction for the long-term good of the industry.

I am a software pirate myself, so why am I revealing all this? Well, I am as keen an ATARI enthusiast as all of you and now I want ATARI to be number one, where it deserves to be. However, the parasitic nature of software piracy will never allow our favorite machines to achieve pole position, unless it is destroyed at the source. I could just give the names of all the definite pirates I know, but I won't - I'd be risking more than losing my hardware! If ATARI and the software companies want piracy to end then they must do the work, after all, they were the main cause.

More than five years ago,when the 400 and 800 were still in their infancy, ATARI was charging about $50 or more for rubbish like Asteroids, With the lure of advertising most owners were "stung" by the extortionate prices, whilst the people at ATARI smirked as they reaped in millions. The average Atari owner had only a few programs. Then the battles started with Commodore, Texas Instruments, etc. - they reduced their software prices to below $20 but ATARI did nothing, they continued at $50 per game. Many owners became fed up with this. A great many moved to other machines and found they could afford three times as much software. Others discovered they could easily copy their friend's tapes and disks since at the time software protection was almost unheard of. Atari, and other companies, should have supported their customers and sorted out their problems years ago, but they didn't and deserved to go down, losing customers to Commodore on the way. I am sure the new Atari will have learned something from that incident.

More money was spent on software protection techniques but all the while the pirates became more proficient at breaking protection and were now able to copy any

software easily. If Atari and the software producers wanted to attract customers to buy their software to below $20, or else justify how they can expect users to pay out half the price of a television license, but it didn't happen until quiet late. The effect of the Atari con-trick was that very few national magazines even mention ATARI products, many people prefer inferior machines because they are better supported and small companies go into liquidation. Piracy is just the ordinary man's logical reaction to the greediness of the short sighted software manufacturers.

O.K. WHAT CAN BE DONE ?

Firstly, let's see how a pirate obtains software. There are basically three different types of pirate.

A) There are those who just receive software for their own use - mainly cassette users - and don't have the technical ability to copy software.

B) Those who provide software to their friends (myself included). We select software that we or our friends want and then get it from a type (C) pirate. We stock no rubbish - disk space is too valuable, so we have only about 200 programs each. We also have many utilities for copying disks, tapes and ROMs and are all disk drive owners primarily responsible for supplying class (A) pirates.

C) The copiers and suppliers who distribute to (A) and (B). They all have Archiver chips (or similar) fitted to their drives, enabling them to copy any software. They have every utility available for copying. They have most of the games available for the ATARI, not just 200 games, more like 200 disks with up to 8 games per side. If they don't have your requested game in their library then they can get it in a week or so. The copiers gather at each other's homes (or users group meetings) for massive game transfers.

Pirates can get games that will never be released to the public or games two or three months before offical release.

If nothing positive is done to combat piracy then it will inevitably continue until no software companies will support ATARI machines. Then everybody loses. So what can be done? If the software companies really don't know, here are some possible means of bringing the pirates to justice.

The larger companies must together strive for harsher punishments for those who copy and distribute software, e.g. removal of all hardware and software with bankrupting penalties.

Private investigaters should be employed who can track down pirates all over the country. The best places to look are at many user group meetings, where all sorts of leads can be obtained. Take a look at ads in national magazines which read " ATARI games swap/sell". From these you can obtain large lists of software - obviously all copies and at ridiculous prices. Incidently the magazines themselves must take a great deal of the blame here for providing one of the major outlets for piracy.

Finally take a look at some of the software hire clubs and at certain of the retail shops in nationaly known hi-fi retailers.

To prevent piracy in the future, the cost of all software must be reduced to justifiable and affordable prices. The moles inside ATARI and ACTIVISION must be dug out and prosecuted. ATARI games must become more widely available than just through mail order, department stores in my area only stock 1 or 2 titles.

My reason for writing this is that I can see hope with the new ATARI of a future where ATARI is number one. LONG LIVE ATARI....

From the Exchange

STEVE NICARRY
ATARI BOOSTERS LEAGUE EAST

THE ATARI XM301

If you have been thinking of taking the plunge into the world of computer/telecommunications but have been unable to justify the expense (averages range from $150 to $300)take heart the ATARI XM301 may be for you.

When I decided to buy myself a birthday present the $49.95 pricetag seemed too good to be believed. Some phone calls and inquiries supported my enthusiasm and I surprised myself on that December morning with a new "toy" to add to my already crowded computer center.

Don't let the size of this unit fool you (5 1/4" x 3" x 1 1/2") this is a sophisticated computer tool. Hook-up couldn't be easier, 1 standard I/O cable coming from the unit, a phone cable and you are ready to boot-up and run. My XM301 is neatly tucked away under a shelf next to my disk drive.

Also included are a variety of bonuses for free time on systems like CompuServe, the Source, Delphi, Dow Jones, and others. More free time is included than the total cost of the modem.

The first and only problem encountered thus far came when I tried to boot the XE TERM diskette provided. A bad DOS file made autorun impossible but another disk formatted with DOS 2.5 was used to copy the files from my master and viola! I'm up and running.

A very comprehensive and user friendly owner's manual is included. The spiral bound 50-page booklet is well written and resembles,in appearance the manual included with my 130XE (as does the new grey colored case).

You may be surprised at the "niceties" that are provided both with the software (called XETERM) and with the unit itself. For example you can load the appropriate file to accomodate the ATARI 800, 800XL or 130XE computers. A phone directory of five numbers is available and dialing is a matter of selecting which number to dial and a single keystroke. You can include text in your listings for names or comments, all of which are ignored during dialing. You can select pulse or tone dialing and can dial any other number not included in your phone-book directly from the keyboard. All changes in configuration, terminal parameters and auto-dialing information, are saved to a file that is read on subsequent boot-ups.

In addition to auto-dial the XM301 has an auto-answer mode to allow for answering calls as well.

Perhaps the most advertised and useful feature is the log-on macro that simplifies the entire log-on procedure. The XM301 will dial any number (CompuServe for example), wait for an answer and automatically transmit all codes or passwords as required. Unfortunately, there is only one macro available this may be a consideration depending on your personal usages.

Down-loading or up-loading of files is supported by Xmodem or CompuServe's A-protocol. Although the 300 baud rate may be too slow for advanced or more full-time users files may be captured as either data or text and may even be saved in D:8 (130XE's RAMDISK)to facilitate in file manipulation. Once you have the desired file in memory you can then go off-line and save to disk.

The file utilities menu allows you to search disk directories, delete, lock, un-lock, or rename files without having to exit the program or even breaking connection.

The limitations, small though they are may one day become reason enough to up-grade to a more powerful (1200 baud) system with more features and fewer limitations but there is NO other comparably priced unit available and I'll be using my XM301 until I can justify paying another two hundred dollars or so to do what I can do now - talk to the world via my ATARI!

ACE Archives

MIKE DAVIS
ATARI BOOSTERS LEAGUE EAST

SILENT SERVICE

"Silent Service" by Microprose is another excellent simulation. The attention given to detail both in graphics and game play is superb. Let's get into an overview of the simulation.

You are going to become a commanding officer of a fleet submarine during WWII in the pacific. Notice I said become. First, you have read the manual about your submarine and its controls and specifications. Second, it is advisable to read the additional information on Japanese anti-submarine tactics and capabilities. As with most military training, you will have the opportunity for weapon practice. In this case, the Navy anchored four obsolete cargo ships in the bay for gun and torpedo practice.

As you practice, you should become familiar with the many screens. There is the conning tower, instrument/gauge panel, navigational charts, the bridge, quartermaster's log, and damage control. When you feel relatively comfortable with handling your sub, you can then try some singular scenarios. These will put you in specific locations within periscope or binocular view of an enemy convoy. In this mode, once the convoy gets out of range or (better yet) you sink all the ships, you are then returned to the main selection screen.

Finally with a few encounters under your belt, you can actually try a patrol. When you select the type of patrol, you will first have to identify a Japanese destroyer type from various silouettes on the screen. If you do this successfully, you will then be permitted to go on patrol in the pacific for enemy convoys.

The only annoyance that I have discovered with this program concerns the 48K Atari. When I run this on a 130XE, I can go from the conning tower to guages to navigational charts without any disk I/O which is very nice because of speed. On the 48K Atari, (what seemed to be) every screen change caused a disk access which of course slowed down your game play. I have not tried this on an 800XL, but I would think that it should act as it did on the 130XE.

In conclusion, I find this program to be the best submarine simulation on the market for the Atari computer.

3E SOFTWARE & SYSTEMS

FOR THE ATARI 800/XL/XE:

Atari 130XE Computer	$ 129.00
Atari 1050 Disk Drive	$ 149.00
Atari 1027 Letter Quality Printer	$ 69.95
Koalapad with MicroIllustrator	$ 39.00
MicroPrint Printer Interface	$ 44.95
MIDITrack II System for Atari 800/XL/XE	$ 219.95
Casio CZ-101 Digital Synthesizer/Keyboard	$ 349.95

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Atari 520ST Color Computer System	$ 794.00
Atari 520ST Monochrome Computer System	$ 594.00
Atari 1040ST Color Computer System	$ 1199.95
Atari 1040ST Monochrome Computer System	$ 999.95
Atari SF354 SS/DD 3.5" Disk Drive	$ 175.00
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OVER 90 SOFTWARE TITLES FOR ATARI ST NOW IN STOCK!

Sale prices subject to change without notice. Prices shown are good thru March 15, 1986 but limited to stock on hand as of February 15, 1986. Sorry, no rainchecks.

3E Software & Systems
931 A Street, Hayward, CA 94541
(415) 537-3637

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BBS Notes

MIKE SAWLEY

MINDLINK REVIEW - PART 4

Well, well, it looks like we're nearing the end of our MINDLINK review (finally, eh?)

Last month we had a look at the message editor that is built into MINDLINK (at least we ended up there). This month we'll have a look at how one goes about reading messages, both public and those in the Electronic Mail section. We'll finish up with a few comments about the system in general.

A short digression first... I tend to use "Zone" when referring to a message section. Some other words are board, base, section. These all mean the same thing really. A place for holding messages on a related topic. I use Zone because MINDLINK and F.o.R.e.M. use [Z] as the command to switch between Zones (boards, bases, sections, etc.).

There are several commands that are used to get information about messages that have been placed in MINDLINK by callers (yes, the Sysop can post messages too). The [*] command will give you various items of information about the currently active zone (remember, MINDLINK will support up to 8 zones plus E-Mail) and the system as a whole. This information is given in a small table. You will be told the High Message number in the current zone, the current zone number, the current caller number (this is the total number of calls that MINDLINK has taken, including yourself) and the total number of messages in the entire system.

There is the [Z] command. This will present a menu of the available message zones. I say available, because the Sysop may have chosen to keep one or more zones closed to you. You should make your selection by typing the number of the zone that you wish to activate. By activating a zone, any read, scan, delete and post commands will act on the selected zone. All other commands remain unaffected.

The [Q]uick scan command will allow you to read the headers of ALL messages that are not private so that you can make note of those that seem interesting to you for later reading. I think it would be nice if you could select the message numbers to scan so that you don't have to scan messages that you have already read.

Finally, there is the [R]etrieve messages command. This is the one that is used to read the entire message. You are given a prompt that allows you to select a range of message numbers to read. You can enter a list of numbers [from]-[to] or you can enter a plus (+) or minus (-) to do a full read in the forward (low to high) or reverse (high to low) order.

Once you start reading messages, there is another set of prompts that become available. You will see [M]ain, [D]elete, [N]ext, [R]eply. These should be rather obvious and with the exception of [M]ain, act only on the message that is displayed.

While this list of commands is certainly usable (you can do anything you need to do with them), there are a few commands I'd like to see added that would make life a little easier. [A]gain would be nice, especially if you are at 1200 baud and the message is rather long. The top of the message just might scroll off the top of your screen before you have a chance to read it. [B]ack would be nice, especially if the previous and current messages are related to the same topic. You could review and consider adding your own thoughts. A [P]rint command for the Sysop (and perhaps optional to high level callers) would allow a hard copy of important messages. [Q]uit would take you back to the message prompt (the same one that is displayed when you hit [R] from the main menu). Currently you must return to [M]ain if you decide to make changes to the message queue that your currently reading. Finally, there seems to be no easy way to get the first (or low) message number of the current zone. Notice that the [*] command above only gives the high message number. There is no information displayed about the zone when you enter it with the [Z] or the [R] command that might help either. I suppose the best way to work with this is to manually keep track of the highest message read and on the next call, start reading with that message plus one using the [from] - [to] format when asked what messages to read. I suppose the best of all worlds would be to have a "Read New Messages" command!

The Electronic Mail (private messages) section, called "Post Office" on MINDLINK, is similar to the other message zones with the exception that you can flag a callers password so that on the next call, he/she will be flagged of existence of E-Mail.

There are two commands accessed from the Main Menu that come into play when using the Post Office. They are [L]eave E-Mail and [C]heck E-Mail, and are always available, irrespective of the [Z]one that is active.

Check E-Mail should be used when you log on and the system advises that YOU HAVE E-MAIL! This is the easiest way to read it. You could also activate the Post Office and then use the normal [R]ead command to pull up your mail, though retrieval is not as fast this way.

Leave E-Mail is used to post private

E-Mail on the Post Office and at the same time flag the password of the addressee so that on his/her next call, "You have E-Mail!" is displayed. In order to send E-Mail with the [L] command, you must already know how the addressee spells his/her log-on name. This is because MINDLINK will search the password file for a match when you enter the name in the TO: field (this is the way most other BBS keep E-Mail private too, using the name or an account number that is part of the password record). If there is no match, MINDLINK will advise you and will not allow the E-Mail to be sent. There seems to be no way to have MINDLINK search out a certain name for you. The only alternative I can see at this time is to read the open message bases and see if you can find the name of interest in either the TO: or FROM: fields of one of the messages. This is not a problem if you are replying to an E-Mail message. There also seemed to be a more serious bug in the E-Mail routines of MINDLINK. It was possible to send E-Mail using only the first name of the addressee. Too bad that the intended caller could not read it! This bug just might lead to E-Mail being sent to the wrong caller, though this was not tested. For example, if a caller wanted to send E-Mail to John Smith, and a password record for John (simply John, no last name) existed, then who would get the mail? Perhaps MINDLINK should require a first AND last name when filling out the password application.

The best thing about E-Mail? Fast. Fast. Fast. Since the password record itself is marked, there is no time wasted while MINDLINK searches the POST OFFICE to see if something is there for you.

There is also the [P]ost Office command that is used from the main menu. This command activates the Post Office in a similar way that the [Z] command activates the other message zones. Once you have the Post Office active via [P], you can use it as any other message zone. This means you can place open (all callers can read) messages in the Post Office using the [E] command. I can't see the a need for this command. Why allow the use of your E-Mail zone for normal messages?.

[X] is used to set several parameters so that the system might be more to your liking. You can set full or short prompts, continuous read of messages or stop at the end of each message with a prompt, and finally clear screen or not. This is a toggle so that once set, you can "un-set" it by executing the [X] command again. It would be nice if this setting could be remembered (in your password record) so that on the next call, you needn't set it up again.

The final command used from the main prompt is reserved for the Sysop (or those he chooses to give it to). This is the Remote Sysop Menu of Commands and is accessed with CTRL-R. This brings up a DOS like menu that allows you to get a "generic" disk directory, lock, unlock, rename, and delete files, as well as format a disk. You can also force compaction of the message zone that is currently active. The Remote Sysop Menu is available only to those that have a download level of 50, well above the normal download levels.

That should about do it for the main features. What of the global features of MINDLINK?

When you first make a connection, MINDLINK will need your password. This should be four letter/characters terminated by a [RETURN]. MINDLINK will search though the password list looking for a match. This search is rather fast since the password list is kept in memory (at least when using a 130XE). If a match is found in the password file, you must then enter your phone number as a confirmation. The phone number entry was an area of confusion for some callers. Especially those new to MINDLINK and not using macros for this entry. MINDLINK is checking input very carefully at this point and will enter the hyphens (-) for you. Numbers are the only characters that are accepted. It is too bad that backspace is not accepted. If you make a mistake, you must continue on, knowing full well that it will not be accepted (we hope!), and then start over again by entering your password. Don't goof up to often on the same connection because MINDLINK will throw you off if it thinks you are "hacking" into the system. You also need not press [RETURN] to terminate the phone number entry. MINDLINK knows how many characters it needs and once accepted, MINDLINK will jump right to the WELCOME screen. Actually, once you get the login procedure down (or are able to set up macros for it), the procedure is quite rapid.

The routines used by MINDLINK to accept input from callers is of the GET type. This means that you needn't press [RETURN] to execute a command as a general rule (typing in a file name for download, for example, still requires [RETURN]). Most novice callers liked this "one-key" input while more expert callers did not. Those that did not like "one-key" input stated the inability to back space out of a typo as their major reason for preferring [RETURN] to execute a command. For example, at the bottom of a message you can go on to the [N]ext or abort reading and go to [M]ain. Since [M] and [N] are next to each other better be careful! Perhaps a switch could be added to the [X] command so that a caller could select "one-key" input or [RETURN]. Another area of GET that needs a little work is how CTRL characters are handled. A

times when reading menus and text files, CTRL-C is can be used to cancel the read and bring up the prompt. At other times this would not cancel the read, but would be accepted as input at the bottom of the menu. This caused the menu to be displayed again.

Have you ever wondered what the Sysop saw when you were online? Well, everything that is sent across the modem is also sent to the Sysop's monitor (or TV). Also, like most BBS programs, MINDLINK has an "information window". This window has five lines but only two lines are shown at a time. The [ESC] key is used to roll the window so that all data can be read. (As an aside, when pressing [ESC] to read other data in the window, MINDLINK takes action on this key press. Most of the time this results in a menu being re-displayed. Most callers will wonder what is going on, while more expert users will realize that the Sysop is peeking. I personally like to keep my peeking secret. Perhaps a console key could be programmed to scroll the information window rather than the [ESC] key.) The information contained in this window is just about all that you should need while a caller is online. Included are the callers name, password information, commands that have entered, last disk file that was accessed, the amount of time that the caller has been online, time/date, etc. (Speaking of time, a caller has only a certain amount of time while online. This can be set by the Sysop on a PER PASSWORD basis and is checked on a PER CALL basis. This means that a caller can return to the system as often as he likes and can stay for the full time limit each call. It might be nice for other callers, seeing as some callers are rather inconsiderate, if this time check could be made on a PER DAY basis.) One piece of information that could prove useful if added would be the amount of free disk space left, either a total or on a per drive basis. Full drives tend to cause problems on a BBS and this would let you see their condition without pulling down the system or using the generic directory command from the RSysop command.

The last thing I would like to address is how to make MINDLINK somewhat "unique" to you. MINDLINK is supplied in object form, and is doing strange things in memory so that MINDLOCK is needed. It would be a clever Sysop indeed that is able to alter MINDLINK. This means that you are tied to SofMark for any additions you might like to add (not likely on a per request basis) and bugs that need fixing. All is not lost however! There is a file that MINDLINK uses to pull up a number of prompts, responses, and such. The text in this MESS.DAT file is easy to alter with a word processor that does not add stuff of its own (like the formating line at the top of an AtariWriter file). You should also be careful not to alter the order of these prompts or you may well end up telling a caller "File not found" when he should be told to "Hit [RETURN] for translation"! By clever use of this text file, you can make MINDLINK more "yours". I think this is a good compromise considering that the speed of MINDLINK is due in large part to ML programming and that most Sysops will not be ML programmers.

So there you have E.S.P. MINDLINK from SofMark. I feel this program doesn't quite yet live up to the claims of "being the only choice" but is well on its way. It will work with any Atari 8-Bit computer and a large variety of modems, disk drives and interfaces. And... you don't need a printer. It is very fast, quite flexible in how you may set things up, and gives the Sysop a lot of control on what a caller can and cannot see. You can also get help from SofMark through their BBS at (503) 689-2348 on a 24-hour basis.

Basic SIG

GUY COCHRANE

BASIC SIG REVIVED!

I have just assumed leadership of the BASIC SIG. My plan is to have a meeting at my home the third Thursday of each month. I assume that people who attend will of two types. Either a beginner who is interested in learning to program or a somewhat experienced programmer who wants to modify some of the existing public domain software written in BASIC.

BASIC is still the best language for beginners. It provides immediate testing of code and has a program editor for revising code. And it is built into your Atari so you don't need to invest in a language before discovering if programming is for you. Many good public domain programs have been written in BASIC. I still use a disk library program that I have modified for dual drives. AMODEM and MICROCHECK are other good examples. The family history program demonstrated at the last meeting was written in BASIC and then compiled with the ABC BASIC compiler.

If you are interested in attending a BASIC SIG meeting or have some BASIC problem you can't solve give me a call at 582-5561 evenings or weekends.

ST Topics

STEWART J. DIMON

ZOOMRACKS - A NEW "METAPHOR"

All of us are familiar with the concept of the card rack. The time card holder we use at work, the rolodex t, or whatever. A concept of this type is very commonplace in our physical world, but until this point, has been foreign to the world of computers and computer software.

Enter Zoomracks.

Zoomracks is a different way of approaching the "data base" idea, where the screen may be split into one, or more, racks of "cards." Each card (referred to as "Quickcards"), may contain one, or a number of fields (called "FieldScrolls"), which contain up to 250 lines of 80 columns of text.

The power in Zoomracks is in that it does not adhere to the typical limitations of most databases. Since the more common database program requires that you define a specific length for each field, any future changes to the field size require a major reworking of the entire database, if changes are even permitted in the first place. Zoomracks DOES optimize the space used by only storing the amount of information that you have entered, but always with the allowance that there could be up to 80x250.

Getting started is easy. There is only one program on the disk, so you click on the ZR.PRG file, and away you go. The first time you run the program, you have the option of setting the default screen size. Since the Atari ST can use an 80x25 screen, and these are the defaults, you can just press return to use these numbers. If for some reason in the future, you decide that 80x25 is not right for you, you can reset these parameters. Since FieldScroll sizes are variable for each entry, setting up a Rack of new QuickCards is very easy.

First, you want to be sure and select a Rack that you won't be using during this session. To do this, open up a rack, (by pressing a number 0..9 that you haven't already used), and press the Insert key. To create a new Rack, type an N (for "New"). You then enter a unique name, up to 8 characters, that will become the disk file name. You are then prompted for the First Field Label Name. If this will be a recipe Rack, perhaps this name will be "Recipe". You then proceed to enter all of the names of all of the fields. These may be on the same line as the current line, (A), or on the next line (N). When you are finished, press the F5 key, and your Rack has been defined. To enter data, select the rack, enter the Edit mode (F3), and type in your data. That is basically all there is to it.

That's the good news. So what could be bad? Well, not much. This is a COMPLEX system. It makes full use of the ST and the ST keyboard. There are NO drop/pull down menus, but the package does support a full range of macros and macro definitions. If you loathe the keyboard, you won't consider this program too friendly. There is no way to avoid using the keyboard.

It should be mentioned that the keys used are "logical." Alt + "M" brings up the Modify "menu" (listed along the bottom of the screen, similar to Lotus or the non-Gem VIP Professional). All of these keys are shown (if not described), in Appendix E of the manual. Throughout the manual, any time that a "new" key is used, its function is described. The only thing missing is a summary of the Function Keys and their operation. In its favor, Zoomracks always displays the current selection menu on the bottom of the page. So you are never far away from the appropriate keystroke(s), and the instructions on how to use them.

The mouse may be used as a selection device to choose Racks, QuickCards, or FieldScrolls. So you don't have to be entirely dependant on the keyboard.

The only weak point in the entire package is the report writer, or rather, the lack of a report writer. You are able to output data from the rack onto the printer, but if you want to format it, you can't do it via Zoomracks. Of course, you could use the data export mode, convert it to straight ASCII, use it as input to a spreadsheet or word processor, and output it however you want.

So who might want this package? Anybody who has information to store and might want to keep it in a very convenient location. That will probably not leave too many of you out. Not only is the disk not copy protected, so that you could use it on a hard disk, it also remains fully memory resident. Therefore, the more available memory that you have, the larger your database may be. It is strongly recommended to have at least a ROM version of TOS installed in your machine. Even better, upgrade your 520 to 1 meg. Of course, if you have a 1040, both of these "problems" will have already been addressed.

The package requires 80 columns in which to operate, so you may use either medium or high resolution. Once you master the "metaphor," the package becomes very

easy to use. The disk is chock full of demo files, so you can see various examples of how the package may be used. Take note, the disk as shipped has all but 3-4 K of space used. It would probably be best to "dedicate" a diskette to your file information.

For anyone tired of the limitations encountered in a typical data base package, Zoomracks might just be the solution you have been looking for. It is available for both the IBM-PC/Clones, and the Atari.

ST Software Review

STEWART J. DIMON

POTENT PASCAL

Ever since I first bought my 520-ST, I have been hoping for another programming language. One that did not cost $300, was documented, did not rely on RPN logic, and was FAST! Deep down, I hoped that there would be a Pascal, similar to Turbo Pascal on the IBM PC, with a few minor changes that improved upon the concept that Turbo was designed with. I am happy to report, that I have found such a product. It is Personal Pascal from OSS.

So what is Pascal? Pascal was designed by Nicklaus Wirth in the early 70's as a teaching language, so that students, who were becoming "sloppy" at programming (due, in part to the unstructured nature of BASIC), could improve their programming style. In fact, even though there is a Goto statement available in Pascal, it is generally recommended that it not be used. Try writing a Basic program without a Goto. Go ahead, just try.

Anyhow, people who are less than enthusiastic about Pascal, point out that it is cluttered with weaknesses. The most blatant/painful (IMPORTANT) of these is the lack of a String type (in "standard" Pascal). From these weaknesses, as in the case of Basic, has emerged a new "standard." Having worked with Turbo Pascal, UCSD Pascal and Personal Pascal, I would have to feel that this product meets this new "standard."

So what makes Pascal better than other structured languages, like for instance "C"? Well, for one thing, Pascal seems to have more "complete" implementations than C. By that I mean that there is a STRICT C standard that EVERYONE adheres to. To get the add-on features, the ones that make your machine perform useful things, requires additional expenditure on your part. The other thing was an interesting antecdote I heard about the C language. It went something like, "C, is a write only language." Of course, this depends entirely on the person writing the program, but I do agree that C is more cryptic than either Basic or Pascal. Look at the following sample program. The first is written in Basic, the second in Pascal, and the third in C. Judge for yourself, which of them flows the most clearly:

```
10 For X = 1 to 10000
20 Next X
30 End
```

```
Program Nullloop;
Var
X : Integer;
Begin
For X := 1 to 10000 D
;
End.
```

```
main()
int x;
for (x = 1;x < 10000;++x)
;
```

Of course, I am not exactly impartial, but I think that you can see that the Pascal reads fairly easily. So why pick Pascal over Basic? A few reasons. First, Basic (at least at this point), is available ONLY as an interpreted language on the ST. Compiled Basics have, traditionally, only supported a subset of the interpreted language, thus limiting there inherent usefulness. People complain about the "rigid" nature of Pascal. I would argue that Basic is more rigid. I HATE LINE NUMBERS. Labels are SO much easier to relate to. In case you are not convinced yet, I have run a few (short) benchmarks, comparing calculation speed between the ST Basic, and Personal Pascal. Though this isn't a "Fair" test, it is the best I can muster without spending $300.00.

The first followed a simple algorithm of 100,000 iterations. Each time through the loop, a real number calculation was performed. Basic used "undeclared" types, and Pascal used Long_Integer and Real types. The second test was screen oriented. Simply "fill" the screen with each letter of the alphabet, on all 25 lines.

Test	Basic	Pascal
	(H:MM:SS)	(H:MM:SS)
1	0:03:55	0:00:12
2	0:05:04	0:01:09

If you have an ST, and you haven't parted, (or EVEN if you have), with the $300.00, I can highly recommend the purchase of Personal Pascal. It also features a full GEM interface library, standard Pascals' features, plus the added power of a UCSD-like extension set. For $79.95 (retail), and a "free" distribution license, you CANNOT beat it. As I become more familiar with the package, I will be writing ALL sorts of programs for PP. Next month, I will begin a tutorial on PP, and how to write useful programs with it.

Special Report

LISA RALEIGH - SAN JOSE MERCURY

(EDITOR'S NOTE: This article is a reprint or an article that appeared in the Sunday San Jose Mercury. The column is written by Lisa Raleigh. We would like to thank them for their contribution.)

Atari means flashy fun and games, right? Perhaps it does for the majority of Atari users, but not necessarily for those who have their Atari STs hooked up to minicomputers and mainframes.

"You wouldn't believe the number of people who have contacted us wanting the ST as a terminal." says Bryan Kerr, marketing manager for Sunnyvale-based Atari Corp.

In fact, that statement was a bit to hard to believe, so I placed a few strategic calls. It wasn't very difficult to locate STs connected to larger systems.

Several professors and students at Case Western Reserve University in Cleveland, for instance, are using STs mostly to "talk to " the DEC VAX minicomputers in the computer engineering department.

Frank Nagle, president of the Bay Area Atari Users Group, often uses his ST as a home work station off the IBM mainframe that belongs to his employer, Signetics Corp. of Sunnyvale.

Affordable Computers in San Jose says that it has sold a handful of STs as terminals for DEC system. And Marcus Dalldorf, owner of San Jose Computer, said that several large accounts have purchased STs to evaluate them as terminals. Volume orders may follow, he said.

But corporate acceptance isn't a shoo-in, Dalldorf admits. There's a tremendous amount of inertia to overcome. The brand name has been dragged through the streets."

Yet economics may prevail, he hopes. The obvious advantage is that you can buy "a whole ST for the price of a dumb terminal." With a dumb terminal, which consists of only a tube and keyboard, users can't "capture" data as they can with a personal computer equipped with disk drives.

Dalldorf hopes that the enthusiastic techies who come in to buy an ST for home use will convince their bosses to install them at work.

At Case Western Reserve, enthusiasts have led the way, but the university itself hasn't followed yet.

In the computer engineering departments, there are 15 to 20 ST users who connect to the department's minicomputers from their homes, says Prabhaker Mateti, a computer engineering professor. But these users purchased the machines with their own money and are pursuing individual projects.

For instance, one professor is investigating how the ST might be used to help design electronic circuits.

If all goes according to plan at Atari, the ST will serve as a terminal to an Atari-made system, according to Kerr. Atari is developing a 32-bit, Unix-based system and "the ST was designed specifically to work with that system." says Kerr.

Kerr refused to comment, though, on Atari's rumored marketing relationship with AT&T, the company from which it licenses Unix and which may sell this upcoming multiuser system.

Announcement

PRESS RELEASE

ST-TERM

ST-TERM is a terminal emulation package for the ATARI 520ST designed for communications with FoReM XE, XE, PC and FoReM ST BBS systems.

ST-TERM is priced at $39.95 and features:

* VT52 emulation with keypad for using EDT on VAX/PDP 11
* Full control over RS232 configuration with host echoing and baud rates 300-9600BPS
* 20 macro keys with an unlimited number loadable from disk with online editor
* Xmodem (modem7 and Amodem) which automatically compensated for the non standard 256+ sectors of FoReM 26M Kermit and throttled/prompted ascii file transfers
* Dos functions without leaving the program:
    - Format
    - Copy
    - Print
    - View
    - Rename
    - Delete
    - Change directory
    - Change default drive
* Mutiple setup files
* 400 entry autodial with built in editor. Support for 10 different dialing commands to support multiple long distance access codes.

For additional information or to order, contact:

Commnet Systems
7348 Green Oak Terrace
Lanham, MD 20706
301-552-2517

Assembly Line

FRANK DANIEL

I have been persuaded to do a 'NUTS & BOLTS' column this month on assemblers. Meaning my editor has got some source programs somewhere in that pulp waste dump he calls an office and wants to know how to get them to run. So here we go.

Presently there are three assemblers that are generally available which I will use for this tutorial. Though there are others, and believe me I got some real odd balls, these three are the most widely used. The assemblers are:

ATARI's ASSEMBLER/EDITOR cartridge

ATARI's AMAC macro assembler

OSS's MAC65 macro assembler

The functions of each assembler that will be discussed are; Entering a file, loading a file, saving a file, assembling a file and debugging a program.

ATARI's editor/assembler cartridge (and OSS's disk based 'EASMD') has its own on-board editor. Though you are not tied to it, it's probably the easiest to use for what the assembler requires.

The editor itself is reminiscent of the ATARI BASIC text editor. Both require line numbers and you can edit any line on the screen. The editor has been enhanced with such functions as automatic line numbering, renumbering, global search and replace.

Starting an editing session is exactly like starting an ASCII session of a basic program. After booting the system, either you type in the source line by line, or retrieve it from disk with the command 'ENTER #D:TEXT.SRC'. Saving a source file is done with the 'LIST' command which works exactly like it does in BASIC. The commands 'SAVE' and 'LOAD' are reserved for use on binary files and will be explained later.

OSS's MAC65 is much like the assembler/editor cartridge, but with some very nice improvements. It also requires line numbers and uses the screen editor. Entering an ASCII source file is done the same way. One improvement is the ability to enter a text file that doesn't have line numbers. This is done by adding the extension ',A' to the enter command. Saving a source file can be done by listing it to a device, but that is not the suggested way.

The commands 'LOAD' and 'SAVE' take on the same meaning as they do in BASIC. With MAC65 you save a TOKENIZED version of your source. This version can only be loaded from disk. This has a few advantages. First, the source file is smaller, it loads in faster than an ASCII file and the file can be assembled at least twice as fast as the others (that's including Crawford's modified AMAC).

AMAC, ATARI's macro assembler, is the odd ball of the group. AMAC, a disk base program, differs from the others in a few respects. First, it doesn't have an editor, second it doesn't have a debugger and third it doesn't use line numbers.

Entering and editing a program for AMAC requires the use of a separate text editor. One editor, which comes with the assembler disk, is 'MEDIT'. The ACTION! editor also works well, as does ATARIWRITER.

MEDIT has a few advantages over the other text editors. One is its ability to edit a file that is larger than memory. I especially like it for modifying programs that I have disassembled. Another advantage is its use of phantom blanks or expanding tabs. Here one byte (character) replaces 1,2,3 or more blanks. This cuts down on the size of the source file.

Starting an editing session with MEDIT requires that you first load the program from DOS. Then at the prompt give MEDIT the name of the file you wish to edit. If it already exists, MEDIT will load it, if not a new file will be opened. At the end of the session, you tell MEDIT to exit. MEDIT will save your file and send you back to DOS. MEDIT leaves you two versions of your file. One, with the file name gave, is the updated version. The file with the extension '.BAK' is the version from the prior save.

Before going into how to assemble a source file, I would like to explain a few conventions and answer a question or two I have been asked in the past.

One question I am always asked is where should a program start or be located. The answer is where ever you want. There are a few exceptions of course. Though it is possible to replace the ROM of the XLs & XEs, it is not a good idea to do this unless you really know what you are doing. Another location to stay away from is the area between $700 to about $1E00 where DOS-FMS resides.

When determining a starting address, a few of the factors that should be considered are, will the program be able to stand alone? Meaning it won't need any support

programs like DOS. Do want to have both the source the object code in memory at the same time? This is very helpful for doing fast debugging. The size of the final code is also a very important factor.

Another question I am asked is where should strings and arrays go. Again the answer is anywhere. I personally like putting strings at the beginning of the program and the arrays at the end. That way if the arrays vary in length, you don't have to worry about it cutting into your object code.

After the source has been entered and saved, the program must be assembled. Assembling consists of taking the program source and translating it into what the computer understands or the object code. Most assemblers also produce a listing of the program for documentation and debugging.

Most assemblers make two passes over a source. The first pass is for checking the syntax and building the global label table. During the second pass the actual object code will be produced. Syntax and addressing error will be displayed during the second pass also.

To have the ATARI Assembler/Editor assemble a program simply requires typing the line

ASM [#Dv(n):SOURCE] [,#Dv(n):(LIST)] [,#Dv(n):OBJECT]

Where the first file designation is the source file, the second where you want the listing to go and the last where the object code will go. Also note that you can leave parts out if you want to use the defaults. As a matter of fact you can use all of the defaults by just typing

ASM(return)

This will cause the assembly of the source that is in memory, send the listing to the screen and put the object code in memory. To save the object code in memory requires typing 'SAVE #D:Filename.ext<start adr,end adr.

One special note, OSS's EASMD will Not put the object code into memory unless you tell it to with a '.OPT OBJ' directive.

To have MAC65 assemble a program is very much like Assembler/Editor cartridge. You use the same command line structure. With MAC65, you also have two additional options. If you type '#-', the listing of the program will not be done (regardless of the internal '.OPT' statements). The second option producing a cross reference table showing all the program labels, their location in memory and all the places in the listing they can be found. Saving a location in memory is done with the 'BSAVE' command.

Assembling with AMAC, it not being a cartridge, is a little different. First you must load it from disk, then at the prompt you enter the file names and options you wish to use. The very minimum is entering the source file name. Other options are:

H=<Object file>

L=<List device/file>

O=<Starting address of program>

PS=<Page size>

S <Use SYSTEXT file>

S=<Use a designated SYSTEXT file>

R=<Reference map. S=short, F=Full>

SL=<Line length on listing>

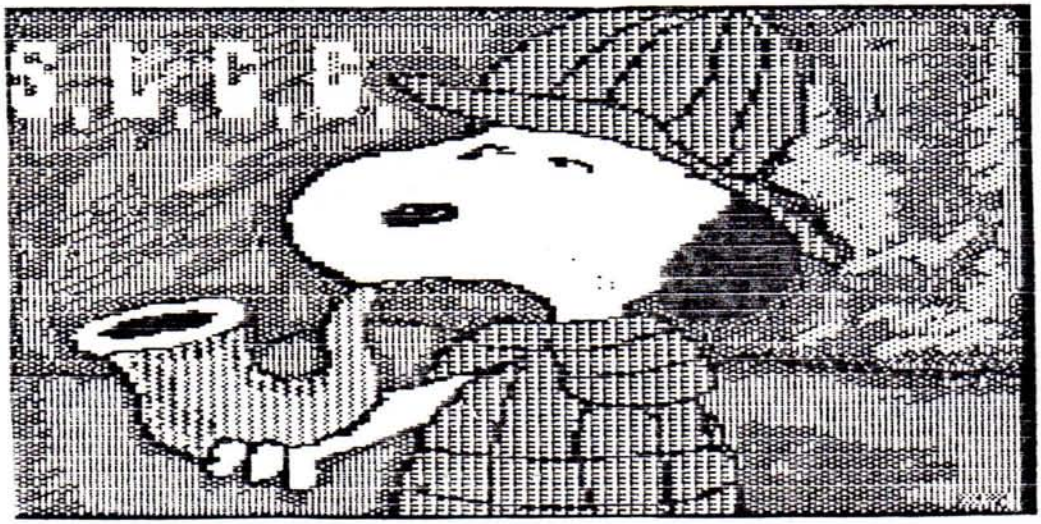
After your program has been assembled you then have an object program that does what you want done. Or, (and this is more likely!) it blows up in your face, emitting sounds closely resembling those of a wounded yak and turning the screen into a junkyard. But take heart, all is not lost.

Which brings me to the subject of debuggers. A debugger is a program that emulates a computer so that you can step through your program, keeping an eye on the registers and memory, adjustmenting them if necessary. The better ones, like SANDBUG, also permit you to set multiple break points and traps.

All debug programs require that your program's object code be in memory. With the Assembler/Editor you can load it from disk with command 'LOAD #D:Filename'. MAC65 uses the 'BLOAD' command. Since AMAC does not have a debuger, your code will likely have to be loaded from DOS.

The more I think about debuggers and debugging programs, the more I think those subjects should be left for some other time. Besides, I think the editor have got enough to keep him busy until next month.

sun	mon	tue	wed	thu	fri	sat
						1 COMPUTER SWAP San Mateo Fairgrounds
2 COMPUTER SWAP San Mateo Fairgrounds	3	4 8 pm MAIN MEETING S.L. Library 300 Estudillo	5	6	7	8
9	10 8 pm ST SIG S.L. Library 300 Estudillo	11 8 pm ASSEMBLY SIG for info call Frank 632-7181	12	13	14 Newsletter Deadline for info call Ron 537-3183	15 7 pm MSIG/GAMEROOM for info call Phil 351-2208
16	17	18 8 pm BBS SIG ATR8000 SIG for info call Mike 482-5061	19 8 pm EXEC. BOARD closed meeting	20 8 pm BASIC PROG. SIG for info call Guy 582-5561	21	22
23	24	25	26	27	28	29
30	31	MARCH 1986				



SLCC Interface

The SLCC Interface is available to all active club members for the purpose of announcing any club function, an item for sale, swap meets, or to be used as a question/answer forum. You may give any officer your contribution to the Interface, or you can leave it on "The Masthead" message base of the Key System BBS, (415) 352-5528, operated by Sysop Mike Sawley.

* * * * *

ST SIG MEETING:
March 10, 1986 8:00 PM
Guest Speaker: Paul Heckle
from Quick-View,
Creators of Zoomracks.

* * * * *

SEE THE SLCC BOOTH AT THE
SAN MATEO COMPUTER SWAP
March 1 and 2
San Mateo Fairgrounds

* * * * *

ATR-8000 SIG NOTES

Many people have been calling Mike Sawley about the ATR-8000 and CPM. Unfortunately, Mike is unable to help with CPM since he has no CPM software or experience. He can assist on ATR-8000 hookup and hardware.

We could use a CPM expert for CPM help. Any takers?

NOTE: ATR-8000 SIG is now a combined SIG with the new BBS SIG. See calendar for info.

* * * * *

FOR SALE: Epson MX-80 Printer with graphics. Call Jim Hood for details at 534-2197.

* * * * *

THE KEY SYSTEM
The official BBS of the
San Leandro Computer Club

24 hours, Passwords required
(415) 352-5528

* * * * *

SLCC Journal

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NEXT MEETING:

MARCH 4 8:00 PM
San Leandro Community Library
300 Estudillo Ave.
San Leandro, CA

7:30-8:00: Soft/Hardware Swap
8:00 Speaker:

LEE ACTOR
GARY LEVENBERG
SYNTHETIC SOFTWARE

186 86/05/08

PLEASE DO NOT DELAY