$1.50

JUNE 1986

PORTLAND ATARI CLUB

Next General Meeting

Monday, June 2, 1986, at 6:30 p.m.
Northwest Service Center
1819 N.W. Everett St.

PAC Bulletin Board Systems
24 Hours - 7 Days a Week

#1 - (503) 245-9405 - 300/1200 BPS
#2 - (503) 245-4608 - 300/1200 BPS

In This Issue

PORTLAND ATARI CLUB - MEMBERSHIP RENEWAL NOTICE

Your membership is about to expire, so we have enclosed this form for your convenience. If you wish to continue your membership and enjoy the benefits it affords you, please complete the following information. You may mail this form and your membership dues, or you can pay at the next monthly meeting. Thank you for your continued support of your Portland Atari Club.

Send annual dues of $20.00, and make checks payable to:

Portland Atari Club
ATTN: Membership Secretary
P.O. Box 1692
Beaverton, OR 97005

NAME:_____

ADDRESS:_____

CITY:_____ STATE:_____ ZIP:_____

PHONE:_____ Number of Family Members:_____

NAMES AND AGES (optional) OF FAMILY MEMBERS THAT NEED CARDS:

_____ _____ _____

_____ _____ _____

OFFICE USE: Renewal_____ Rec'd by_____ Date_____ Cards___ Check__ Cash__

Please use the back of this form for comments, either pro or con. We need your ideas to better serve you in the coming year.

P O R T L A N D A T A R I C L U B

(Not affiliated with ATARI, Inc.)

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Newsletter Editor:	DeLoy Graham	649-6993
Advisor:	Chuck Hall	626-3717

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Debbie Pritchard	- Production Coordinator
Kevin Roethe	- Mailing Coordinator

 Material for publication may be submitted in the following formats: ST text files, Atari DOS II text files, LJK text files, printed, typewritten, or legible handwritten copy. Media may be sent to the editor at the address below and will be returned to the submitter. Contact the editor for instructions on uploading submissions to the PAC BBS.

Commercial Advertising Rates: full page (7 X 9 1/2) - $50, half page (7 X 4 1/2) - $25, quarter page (3 1/4 X 4 1/2)- $15. Ads must be prepaid and a 1/3 discount is given for 3 consecutive ads. The copy may vary in content, but the space must be the same in each issue. Send camera ready copy and check payable to PAC at the address below. Ad deadline is the 5th of the month prior to publication. Please **contact Lee Gassaway** (591-5252 or 642-2455) on all matters pertaining to advertising.

Membership is $20 per year and includes a subscription to this newsletter and access to members-only functions. Single copy price of the newsletter is $1.50. General meetings are open to the public and start at 6:30 p.m. on the 1st Monday of each month (2nd Monday in the case of holidays) on the date and at the location listed on the cover of this newsletter.

Exchange newsletters, articles, correspondence and ads should be sent to the following address:
Portland Atari Club, Attention: (appropriate board member), P.O. Box 1692, Beaverton, OR 97005

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PRESIDENT'S COLUMN

Vern Vertrees

Well we made it through our first meeting at the new location, and I think it went pretty well. Their were some trial situations that I'm sure time will work out, but I'm confident now that we made a good choice. Thank's to the demo of SUPER BOULDER DASH, and the video sent to us by SLCC we had a very good meeting. It was nice to hear that Atari is planning new and exciting products for ALL ATARI COMPUTERS.

This month has been very busy for many of us with the computer show and all, so this column will be shorter than usual. I do however want to give a special thanks to Chuck Hall, and all who helped make the show a great success. It was very well organized and ran smooth. We signed up fifteen new members and everyone had fun showing off our great computers and software. It was a little different from last year when our club booth was showing the only ST in the show. This year just about every corner you turned there was another Atari computer. This was due to the fact that there were, besides the club booth, four store's demonstrating Atari computers. Thank you COMPUTERS, ECT., FRED NICKEL'S COMPUTERS, HIGH TECH TOYS, AND I B COMPUTERS for your help in making ATARI the most visible computer at the show.

I received a phone call the other day from Sig Hartmann of Atari Corp. I won't go into detail now, but I should have more at the next meeting. We have been asked by him to take on a huge project. It would take a lot of planning and help from all of you to to pull this off. I do know one thing for sure though, if any club could pull it off it would be PAC.

I am pleased at the success of our SIG groups. As most of you know we have a lot of help to offer on the different software programs for both eight bit and sixteen bit computers. If there is any program that you need help on please let Tom Brown or any one of the board members know about it and I'm sure we can help.

One thing more. I want to take full blame for a late news letter this month. I was very late getting this to Deloy even after he pleaded with me. I sincerely apologize to all of you.

Hope to see you at the meeting

Vern

SPECIAL PROJECTS
Chuck Hall

I hope many of you had the chance to stop by the Computer and Business Expo this year. If you did, you saw first hand the impact Atari is having on the industry. Besides the club booth, Atari was represented by five dealers. Not all were as enthusiastic about the Atari products as the rest, but all in all we had good coverage. The dealers present were:

Best Electronics	Computers Etc.
Fred Nickels Computers	High Tech Toys
IB Computers	

I hope the show was very successful for all of our dealers. The club gained many new members. We welcome and thank all of you for taking the time to stop by and find out what we were all about. The most important part of the show was the effort put forth by our members in setting up, tearing down, and manning the booth. I wish to thank them all very much for there efforts, and hope to be able to call on them again when we next put the booth up. Those who helped were:

Setting Up

R. Barhitte	C. Pritchard	S. Billings
K. Roethe	T. Comerford	E. Schlichting
P. Hoesly		

Tearing Down

D. Gibson	E. Schlichting

Working the Booth

T. Addis	J. Oxborrow	J. Anderson
T. Person	R. Barhitte	D. Poole
J. Berry	J. Richter	L. Bole
D. Roberts	R. Chaffer	S. Rockhill
L. Gassaway	J. Roetker	D. Gibson
G. Schilling	D. Graham	E. Schlichting
B. Heiberg	F. Stendall	B. Lavine
L. Suiter	R. Leony	L. Thomson
J. Miller	D. Wagner	D. Morrow
W. Wakefield	D. Nickel	J. Waltz
F. Nickel	P. Warnshuis	M. Oxborrow
T. Williams		

I apologize if I have omitted any names. There were a couple of last minute changes that I might have overlooked. Atari Corp. was kind enough to send us a quantity of T-shirts and posters. The posters are all gone, but there are just a few T-shirts left. We will figure out a method of giving those away at the next meeting. I will also have available at the meeting brochures, catalogs, etc., which I asked several software companies to send for the show. Their response was quite good.

The show was quite different from those in the past, in that this show concentrated more on business computing. There were more clubs present than in the past, but I think everyone will agree the Portland Atari Club had the best booth there. There were very few deals available. Two I was aware of were Verbatim disks for $.49 each, and Avatek 1200 baud modems for $94.00. We will be gearing up to do this a few more times this year. If you are interested in helping out, you have to come to the meetings to sign up. I will let you know as soon as I have firmed up another event.

DISK CLINIC

One of the exhibitors at the Computer show this year was Best Electronics out of San Jose, California. This was Brad Coda's second year here, and as always he had some great bargains and Atari memorabilia. We are in the process of making arrangements to have Brad back up this summer. He puts on disk drive clinics around the country. He will clean, align, and repair your disk drive, for only the cost of parts. We will be trying to make this an all-day, or maybe even a two-day event. In concert with this, I am sure that Brad will be willing to bring some more of his stock, plus we will have other tables or whatever available for other members to bring their stuff to trade or sell. We are shooting to do this on a weekend in July. Brad will need some volunteers to help with his clinic, primarily to disassemble and reassemble the drives. He will do the technical work, but he likes to set it up as an assembly line. So if you have some experience in taking drives apart and putting them back together again and would like to participate in this effort, get me your name and number. Maybe we can add some other events, or exhibits during this workshop weekend. Let me know if you have any ideas.

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* **IMPORTANT DATES** *
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* **Newsletter Deadline**, June 7, 1986 *
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* **Board Meeting**, June 30, 1986 *
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BOARD MEETING NOTES
Dan Gibson

The April Board Meeting was held at 7 p.m. on April 28th at IB Computers. Attending were the following: Chuck and Jean Hall, Dan Gibson, Tom Brown, Jim Miller, Steve and Debbie Billings, Tom Addis, Elanna Schlichting, Jerry Anderson, DeLoy Graham, Jim Berry, and Vern Vertrees.

MAY MEETING

The May general meeting will begin at 6:30 in our new location at the Northwest Service Center with PAC software sales until 7:00 when the main meeting will start. First off, the Board members will give a brief update on their respective areas. Then the SIG Group leaders will tell us what each of their groups are doing and when they are meeting. The business part of the meeting will center on the C.B.S.E. show at the Coliseum May 8th through 10th. By the time you read this the show will be over, but I am sure it will be another success for Atari with the PAC, IB Computers, High Tech Toys, BEST Electronics, and Fred Nickel's Computers all featuring Atari products at their booths.

In addition, we will also be showing a video tape from the SLCC Atari club meeting in California with the top brass from Atari answering questions about what is happening in the Atari world. If you missed the tape, it is available to check out at IB Computers. The entertainment part of the May meeting will feature a demonstration of **Super Boulderdash** by Steve Billings, complete with real boulders.

MISCELLANEOUS

A motion was passed that all purchases by the club over $100 be done on a bid process with the board choosing the best deal among the bids. The rules for bidding have been defined by a special committee and contain the following: For amounts below $100, the source will be at the buyer's discretion. For amounts from $100 to $500, the source will be determined on an informal bid basis - a Board Member will research prices by phone from a purchase list of participating dealers. For amounts over $500, dealers on the purchase list will be formally notified by letter and given a specified deadline for bids. All bidders will be notified of the club's decision.

The PAC #2 BBS is testing a hard disk drive system. Give it a try and let us known what you think. Toys 'R Us is now carrying the 520ST.

TREASURER'S REPORT

As of this writing, the balance in our checking account stands at $1,355. At the last meeting software sales totaled $225 and we received $600 for memberships.

MEMBERSHIP NOTES
Jim Miller

I do not know what you thought of the new meeting place at the NW Service Center, but I thought it was pretty nice. The computer show at the coliseum was good and a lot of people stopped by the club booth. I'm sure we will see the club membership grow some with the publicity from the show. I wish to welcome the following new members and families to the PAC:

David Hablewitz	Dale Scotto
Rick Hoyle	Barry Armstrong
Robert Lyons	Timothy Smith
Michael Loggins	Simon Duvall
Kevin Verdon	Dean Stohr
Hartmut Kuntze	John Roberts
Bruce Boland	Tony Doroski
David Gilman	Steve Gottjardt
Carlton Arnold	Robwert Cary
Larry Martincek	Steve Guthrie
Adam Trent	Larry Johnson
Jim Holman	Mike Desart
Wayne Arakaki	Jim Leasure
Walter Van Eck	Mike McLarney
Brian Kroll	Myrtis Workman
Edward Kay	George Churilla
John Calvert	Jan Sellon
Joseph Koscich	Greg Lof
Michael Phillips	Scott Krig

This makes a total of 600 members at the present time.

N.W. SERVICE CENTER INFORMATION
Elanna Schlichting

You probably have several questions about the new facility for the PAC general meetings, so here is a general overview:

BUSES: Numbers 53, 17, 20 and 77 all pass in the vicinity of the N.W.S.C. Call Tri-Met for more information, or pick up a bus schedule at the N.W.S.C. office.

PARKING: There are four lots available to us, barring major athletic events at the Stadium. The first is the N.W.S.C. lot on the northwest corner of the block. We ask that at least four of the spaces in this lot be reserved for handicapped parking because the wheelchair entrance is accessed from that lot. If more are needed, we will designate more spaces. The other three lots are Temple Beth Israel between 18th and 19th on Flanders, St. Mary's on 17th and Davis, and Trinity Episcopal on 19th and Davis or Everett.

RESTROOMS: The handicapped and men's restrooms are on the main level; the women's is on the lower level.

WATER: On the main level, to the back, near the handicapped restroom.

GENERAL RULES: Other than for the following special notes, just use your common sense about what to do. Please remember that we are not the only ones using the facility during the evening, so keep the noise level down. We need to keep our nametags to comply with the security request from the N.W.S.C. We are responsible for leaving the area as we found it. Help clean up whatever mess you make. If you wish to post notices, please do so only with Scotch Magic Tape, and then only on glass and doors. We will be fined $5.00 for each instance of non-compliance. We are required to comply with all laws, orders and regulations of Federal, state and municipal authorities and to obtain all licenses or permits which may be required for the conducting of our business here.

If you have any questions or comments (positive or negative) please let me know. Also, if you need to look over the lease and/or the rules, check with me.

COMMITTEE REPORT: Buying Guidelines
Elanna Schlichting & Steve Billings

[Editor's note: These recommendations were presented to the PAC Board on April 28, 1986. After consideration, Chuck Hall moved that we adopt these guidelines as presented in this column. Tom Addis seconded the motion. The motion carried with a unanimous vote.]

The recommendations of the Buying Guidelines Committee are as follows: (These recommendations are to pertain to Atari specific products only.)

The Board will send out an initial letter to all local Atari dealers notifying them of our intention of establishing a purchase contact list. Included in that letter will be a description of the purpose of the list, a listing of advantages to them to be included on that list, an offer to accept advertising for the newsletter, and an offer for them to join the club should they wish. They will be requested to notify the club of their desire to be on the purchase list, to give us an official contact person, and to give us a description of the type of product they sell.

The actual buying guidelines are as follows:

For amounts below $100.00, the source will be at the buyer's discretion.

For amounts from $100.00 to $500.00, the source will be determined on an informal bid basis - a Board Member will research prices by phone from the purchase list.

For amounts over $500.00, dealers on the purchase list will be formally notified by letter and given a specified deadline for bids. All bidders will be notified of the club's decision.

Two notes:

1. The estimated amounts, i.e. $100.00, etc., are officially to be the Board's best guess prior to actual price investigation. Also, the amounts include block buys of items that individually cost perhaps less than the figures given, but which total $100.00 or more.

2. The criteria for consideration of informal and formal bids will be price, availability and quality. The weight of each of these will depend on what is to be purchased and what is the club's immediate need.

SPECIAL INTEREST GROUPS
Tom Brown

BUSINESS APPLICATIONS SIG
8 & 16 Bit Atari Computers
Dates: 1st & 3rd Wednesdays
Time/Place: 7:00 p.m. / Beaverton HS, Room 129
Leader: Tom Brown / Ron Chaffer
Phone: 646-5237 / 283-5691

PASCAL/MODULA-2 SIG
Dates: 2nd & 4th Wednesdays
Time/Place: 7:00 p.m. / Beaverton HS, Room 129
Leader: Tom Cloyd
Phone: 643-9192

ST EXPLORER'S SIG
Dates: 1st & 3rd Thursdays
Time/Place: 7:00 p.m. / Tektronix, Bldg 47
Leader: Richard Barhitte
Phone: 206-573-0292

ST FORTH SIG
Dates: 1st & 3rd Thursdays
Time/Place: 7:00 p.m. / Tektronix, Bldg 50
Leader: Tony Roth
Phone: 222-4999
Note: Please wear your PAC ID badge for security purposes. Our primary interest is in developing utilties to use with the FORTH environment. We will also try to set up a BBS.

GENERAL ST SIG
Dates: 2nd & 4th Thursdays
Time/Place: 7:00 p.m. / Tektronix, Bldg 50
Leader: Pat Warnshuis
Phone: 246-3724

MODEM & COMMUNICATIONS SIG
Dates: 2nd & 4th Mondays
Time/Place: 7:00 p.m. / Call
Leader: Jerry Anderson
Phone: 655-3914

8-BIT EXPLORER'S SIG
Dates: 2nd & 3rd Tuesdays
Time/Place: 7:00 p.m. / Call
Leaders: Tom Comerford 246-4694
Wayne Winterbottom 669-1367

ASSEMBLER SIG
Dates: 1st & 3rd Tuesdays
Time/Place: 7:30 p.m. / Call
Leader: Clyde Pritchard
Phone: 648-0461

NEWSLETTER SIG
Date: Wednesday following general meeting
Time/Place: 7:00 p.m. / Call
Leader: R. Deloy Graham
Phone: 649-6993

For information on SIG activities, call SIG leaders or Tom Brown.

8-BIT EXPLORER'S SIG
Wayne Winterbottom

We had two very interesting and talented club members join us in April to share some of their Atari expertise.

On the 8th, Jerry Anderson, PAC disk Librarian and Communications SIG leader, brought his telecommunication equipment and several of his software packages. The group really enjoyed seeing two computers communicating to each other and learning about the widespread value of telecommunications. We all wanted to go out and buy a modem that evening.

At the second meeting, Dan Gibson, PAC Secretary/Treasurer, demonstrated **Computer Eyes**, which is another one of those items we cannot live without, but I do. Dan did a nice demo, videotaping people and object's and then the Atari did the rest, digitizing the image and displaying it on the screen, printing it, or saving it to disk for later use. Saving it to disk would allow us to use **Koalapainter** or some other paint program to manipulate the picture, add color or detail lines, etc.

See you at the June Explorer's SIG meetings!

PAC HELP HOTLINES

The following people have generously offered to take telephone queries in the areas indicated.

Adventure Games	Russell Schwartz	646-6418
Assembly Language	Leroy Baxter	653-1633
BASIC Programming	Nick Yost	981-0838
	Lee Gassaway	642-2455
BBS Usage	Steve Billings	246-1751
	Don Adams	245-7168
	Russell Schwartz	646-6418
C	Randal Schwartz	285-5764
Cassette Operation	Lee Gassaway	642-2455
DOS Operation	Wayne Winterbottom	669-1367
FORTH Programming	Ron Chaffer	283-5691
	Ricky Wooldridge	224-7163
Operating System	Nick Yost	981-0838
	Leroy Baxter	653-1633
ST General	Chuck Hall	626-3717
ST Fundamentals	Richard Barhitte	206-573-0292
ST Business Prog	Dean Nickel	281-5117

ASSEMBLY LANGUAGE COURSE
Lesson Eight: Some Advanced Topics

Chris Crawford

We have covered all of the traditional material associated with 6502 assembly language programming. However, there remain a number of topics that should be addressed before we finish. They are not closely associated with each other, so I will take them in random order.

The first topic is perhaps the most difficult one for a beginning assembly-language programmer: Where do I begin? How do I put together an entire assembly language project?

The problem here is seldom a technical one. Most beginners are stopped by their own lack of goals rather than any lack of technical expertise. One does not just write an assembly language program because one knows assembly language -- that is putting the cart before the horse. One starts with goals and then considers means.

A story from my early days with micros will illustrate this point. I did not have anybody to teach me assembly language. I decided in 1976 that I wanted to do wargames on computers. Accordingly, I bought a KIM-1, an early 6502-based single-board computer. I received it in January 1977. I studied the manuals and taught myself 6502 machine language. I had my first wargame up and running in six weeks. That means that I not only taught myself 6502 in six weeks, but I wrote and debugged a program at the same time. Now, the point of this story is NOT "Wow, isn't Chris Crawford the smartest programmer who ever lived!" The point of this story is that goal-oriented learning is far more effective than goal-less learning. Had I sat in on some technical course on 6502, I would have taken months and months to learn the material. Because I had a clear goal, I learned very quickly.

My advice to you, the beginning assembly programmer, is this: You have acquainted yourself with the rudiments of 6502 programming. If you have some project you would like to pursue, some goal you would like to achieve, then do it. If not, don't waste your time trying to use a tool for its own sake.

Assuming you pass this first test, there remains the broad problem of organizing your assembly language program. I suggest that you break your program up into six modules, each forming a separate source code file. These six modules would be:

EQUATES file: this file defines all of the equates used by the program: the data areas, the page zero and page six usage, and perhaps some of the large graphics and screen structures.

DATA file: this file contains all of the static tables used by the program. This would include all the text messages that would be printed onto the screen, bitmaps of graphics images, graphics character set definitions, etc.

INITIALIZATION code: this file contains the routines that initialize the program when it first fires up. They set up the screen, clear out all the special graphics and sound registers, zero out all the arrays that need to be cleared, and do all the other legwork associated with clearing the decks for a program.

INTERRUPT code: this module contains the code associated with any interrupts used by your program. This would most commonly involve vertical blank interrupts and display list interrupts. Inasmuch as your interrupts should be well-separated from your other code, you might as well keep the code in a separate file.

MAINLINE code: this includes the main program loop that controls the primary behavior of the program. If you have problems imagining this, think of it as nothing more than a series of subroutine calls arranged in a loop, with each subroutine handling one chunk of the overall process.

SUBROUTINE code: after a while you build up a collection of subroutines for handling standard processes in the program. Keep them here.

The second topic I would like to talk about is the place of the 6502 in the larger world of microprocessors. The 6502 is undoubtedly the most successful of microprocessors to date, having been installed in more systems than any other microprocessor. It is also a very old microprocessor, having first appeared in 1976. That makes it nine years old.

A very simple way to approach the world of microprocessors is to group them into two sets -- the Sixes and the Eights. The Eights represent the earliest group of microprocessors, they trace their lineage all the way back to the 4004, the first microprocessor. The 4004 was followed by the 8008, the first eight-bit microprocessor. The 8008 was superseded by the 8080, which was in turn followed by the Z-80. The Z-80 was the most advanced eight-bit processor in the Eights line. The next step was to go to 16 bits with the 8088 and 8086. These were followed by the more powerful 80186, 80286, and 80386.

The fundamental philosophy of all the Eights can be expressed in two words: features and compatibility. The designers of the Eights were always adding new features to the microprocessors with each successive generation. The goal seemed to be to pack as many bells and whistles in as would fit. The second goal, compatibility, meant compatibility with the previous microprocessor in the series. This insured that software developed for previous versions would still run on the newer versions.

The result of this design philosophy was a series of powerful microprocessors that were quite complex in layout and rather difficult to learn. The features were piled up on each other in a bewildering array. Once you learn the system, it seems natural enough. But it is something of a mess.

The Sixes include the 6800, the 6502, the 6809, and the 68000. The two key words guiding the design of the Sixes are cleanliness and speed. The idea was to make the instruction sets clean, powerful, and fast. The hope was that the processors would be so easy to learn that compatibility would not be a problem. The design approach was to use just a few simple instructions, but give them variations that greatly extend their power. Thus, the 6502 has a LDA instruction that can be used with a great many addressing modes.

The 68000 is the 32-bit entry into the Sixes line. It carries the idea of cleanliness even further than the 6502. The 68000 uses a single instruction with different modes to replace the 6502 instructions LDA, LDX, LDV, STA, STX, STY, TXA, TAX, TYA, PHA and PLA. That's quite a simplification!

The 68000 also boasts sixteen registers, each 32 bits wide. That's a total of 512 bits of register space, the 6502 has 32 bits of equivalent register space. Those sixteen registers eliminate many of the data-shuffling problems so common with the 6502.

The 68000 has a linear address space 24 bits wide -- that's sixteen megabytes! Thus, a 68000 can directly address 16 megabytes of RAM and ROM. The 6502, by contrast, can only address 64K directly -- it must use paging systems that slow it down to address more memory.

Finally, the 68000 has a number of advanced capabilities that make possible a number of special capabilities. I will describe just one stack frames. The 68000 makes it easy to set up a local, temporary stack when you enter a subroutine. Thus, subroutines can have their own local variables stored on the stack, accessed via a special stack pointer register. The 68000 will manage all the housekeeping necessary to keep such a system straight.

Did I mention that 68000 has hardware multiply/divide?

REPORT FROM THE WEST COAST COMPUTER FAIRE

Gigi Bisson, ANTIC Assistant Editor

"Not much."

The burned-out exhibitors and jaded computer journalists said it again and again. After three major shows in Europe, the West Coast Computer Faire in San Francisco looked like a swap meet in comparison. Press grumbled that there were no real innovators as ample crowds swarmed around a slim display of new products.

But for Atari users, "not much" was enough. The industry is beginning to take Atari Corp. and the ST computer seriously, and it is refreshing not to have to hunt for Atari products at a show. The only hunting I did was burrowing through dense crowds to get a glimpse of the ST and 130XE in action.

THE 520 MAC

The thickest crowds were clamoring around the San Leandro Computer Club users group booth where Dave Small demonstrated Apple Mac Paint on an Atari 1040ST. Small's invention, the Data Pacific Maccartridge, allows the one megabyte ST to run software written for the Apple Macintosh. It's an eerie sight watching MacPaint appear on the larger 1040ST screen as Small zips through window after window at speeds 20% faster than the Mac.

Small has a prototype of the cartridge up and running -- with one minor hitch. It requires the Apple Macintosh ROM chip. Data Pacific president Joel Rosenblum says he purchased the chips off the shelf from an Apple dealer, but his small company is destined to have trouble getting permission from Apple to license the ROM chips. Apple has already turned down ROM chip requests from corporate giants General Electric and AT&T.

Datapacific could conceivably have users install the ROMS in cartridge themselves. "This could be a shrewd move for Apple," Small says. As Mac users trade in their 256K chips for more memory, Apple is accumulating a supply of old ROMS that could be then resold to ST owners at a profit.

"I was bored with programming, I needed a challenge," says Small, an Atari programmer and writer who co-authored the "Guidebook For Winning Adventurers" with his wife Sandy Small.

Why bother making the ST Macintosh-compatible? "It's anarchistic programming," Small says. Indeed, Small's hardware tinkering may be the hacker's equivalent of windgliding off Mount Everest. He started in November of 1985. "I code-named the project MAGIC, because that's what I thought I was doing," Small says. "Then I began writing code, and writing code...and writing code."

By Christmas, all he had on the ST was a Macintosh frowning face. "Of course it was sad," Small says, "It was running on the wrong computer."

By January, he had "Welcome to the Macintosh" on the ST screen. "My first rule of programming is: No pain, no gain," Small says. So he subjected himself to pain alright: "I played all of my Neil Young live albums."

Five months, and 7,000 lines of machine code later, David Small finally hacked his way into the Mac. To run the MacCartridge, Small first runs a RAM disk to kick GEM out of the ST memory, then runs 7,000 lines of assembler. And yes -- like magic -- the ST becomes a Macintosh.

"I've looked at this program for a month, so it no longer impresses me," Small said as he played with MacPaint on the ST and created a Macintosh bouncing ball. "But for some reason, everytime I look at this I think of Neil Young singing:'Hey, hey, my, my...'"

Then someone in the crowd asked: "Isn't this like putting a Hot Rod Chevy engine in a Ford?"

"Oh, no," Small replied, "It's quite the opposite."

LYING ONLINE

One of the most intriguing products at the West Coast Faire didn't exist yet. NEXA Development demonstrated a Macintosh version of **Falcon**, the first flight simulator that can be flown by two or more users simultaneously. Whether next door, or thousands of miles away, two users on separate computers can fly with each other, or compete in mid-air dog fights by communicating with a modem.

Originally designed for the Japanese market, the Japanese debut of **Falcon** featured a national "fly off" with dozens of users playing simultaneously, according to NEXA president Gilman Louie. The Berkeley, CA-based company plans to develop a color ST version which will be distributed by Spectrum Holobyte this summer.

USERS GROUPS GET IN THE ACT

Atari didn't have a booth at this show, so, along with a few third party software developers, they demonstrated their products in the San Leandro Computer Club (SLCC) and ABACUS users group booths. SLCC showed the **Silent Butler** personal finance program and Atari **Planetarium** for the 130XE 8-bit computer and the Atari 20-megabyte ST hard disk drive, demonstrated the Hippovision B&W video digitizer, the Shanner International 3.5 inch ST disk drive, and Holmes and Duckworth **H&D Base**, an ST database management system from Mirage Concepts. The club anticipated a demonstration of the Atari ST CP/M emulator, announced last month at the Hanover Faire in West Germany. However, Atari decided to wait until the Spring Consumer Electronics Show to unveil that product in the U.S.

MULTITASKING FOR THE ST

The West Coast Faire also marked the first appearance of **Micrortx**, a $69.95 Atari ST multitasking operating system. (Not to be confused with **Micro C Shell**, a $49.95 UNIX-like programming environment.) The developer, David Beckemeyer, claims **MicroRTX** can run standard ST programs out of the box, be used as a printer spooler, or allow a user to run a bulletin board and use the computer for a separate task at the same time.

"Multitasking has been a thorn in Atari's side ever since the release of Commodore's Amiga," says Beckemeyer. He's shooting for a summer release date.

PRINTSHOP CLONE

If **Printmaster** is any good at all, it's destined to be a hit. The developer, Unison World of Berkeley, CA demonstrated the program, which creates banners, cards, and stationery just like Broderbund's **Print Shop** graphics program. It features eight type fonts, and unlike **Print Shop**, can do both upper and lower case type, mix type fonts on a page and create calendars. The $39.95 program features both graphic and text editors and an optional $29.95 Art Gallery.

SLUGGISH, MUDWALLOWING BEAST NEWS

Here's the latest from Hipponews, the new newsletter from those prolific folks at Hippopotamus Software. **Hippoword**, a new $89.95 wordprocessor is the first laserwriter-compatible ST product. It features true multi-column editing, fonts, word statistics, and 80-column editing and can combine picture files from **NEOchrome** or **DEGAS** with text. **Hippolaser** contains the laser driver and fonts and retails for $69.95.

Hippo has released **Hippopixel** which allows you to create and edit your own custom fonts or sprites for $39.95 and **Hippoconcept**, an $89.95 idea processor. Hippo **X-10 Powerhouse**, a $139.95 home controller that dims lights and appliances and the $149.95 Hippo **WAO Educational Robot** are in the BETA stage as of this writing.

SUPRA MODEMS

At the Supra Corp. booth, Alan Ackerman, president of the Albany, Oregon peripherals manufacturer demonstrated modems for both the Atari 800 XL/130XE line and the ST computers. The 300 baud 8-bit modem retails for $59.95, a 1200 baud model is $199.95. A 300 baud ST model is $69.95, the 1200 baud version is $199.95. Ackerman also displayed several prototype hard disk drives, including one he claimed is a streaming tape backup.

THIRD DIMENSION

ABACUS, the Atari Bay Area Computer Users group, held an all-day meeting at the Faire that included demonstrations of the **ST Music Studio** from ActiVision, and several Atari products. Later, Antic's Jon Loveless demonstrated Tom Hudson's **CAD-3D** computer-aided drawing program for the ST. The room fell silent as Loveless drew only the faintest outline of a wineglass onscreen, and the computer envisioned the details, filling in shadows and highlights of a three-dimensional goblet. He then tilted the glass in several directions. "If you've never had a wineglass come towards you on a computer screen before, well, it's quite an experience," Loveless said. **CAD-3D** should be on dealer shelves in May.

IMITATE OR EMULATE

If the future of microcomputing has a theme song it could be:

There's an Apple II in a Mac in a Kaypro in a PC in a 1040ST...in a hole in the bottom of the sea.

If you can't imitate, emulate. This seemed to be the predominant theme during the most recent wave of computer shows in both the United States and abroad as Atari Corp. and third-party developers announced products that may one day make the 1040ST compatible with not one but three operating systems: MS/DOS, CP/M and the Apple Macintosh OS.

(continued on the next page)

(**WCC Faire,** continued from previous page)

Just as we were at last ready to return our attentions to The Operating System -- the ST's very own TOS -- Antic received word of yet another. California-based Computer Applications (developers of the II in a Mac, an Apple II emulator for the Macintosh) has an Apple II emulator for the ST in the works.

Operating system emulators are proliferating. Maccharlie, an IBM PC-compatible hardware addition for the Macintosh, never made waves in the business community. The IBM emulator for Commodore's Amiga isn't likely to either with it's steep $700 price tag. As the industry hunts in desperation for standards, compatibility -- whether real or emulated -- will be an increasingly important issue.

"Clones" and "work-alikes" of popular IBM software products are also already appearing for the ST. Mirage Concepts' **H&D Base,** and Versasoft's **dbman** are following in the footsteps of **dbase II. VIP Professional** is playing follow the leader to **Lotus 1-2-3.**

AI FOR THE LAYPERSON

The publishers of Computer Language magazine launched their second magazine, AI Expert, the first commercial publication to cover the field of Artificial Intelligence. Currently the only publications available for AI professionals and hobbyists are academic research journals and expensive specialized newsletters. "Artificial Intelligence is no longer in the hands of the academics," says AI editor Craig Le Grow.

PRIME TIME HACKING

Cap'n Crunch, The Woz, Bill Budge and Lee Felsenstein aren't just millionaires, they're legendary hackers. Fabrice Florin has put their story on celluloid in "Hackers: Wizards of the Electronic Age". The acclaimed documentary film will be broadcast during the week of April 21 on over 50 public television stations nationwide.

"This is one of the first times that those much maligned electronic pioneers will presented in a positive light on national television," Florin says. Hackers was inspired by Steven Levy's book of the same title and the 1985 Hacker's Conference. It all started when Whole Earth Software Catalog editors Stewart Brand and Art Kleiner invited over 100 computer wizards to Sausalito, California for a weekend of brainstorming and hacking until the crack of dawn. Florin filmed the event, splicing in interviews and historical film clips.

Hackers is also available on VHS or Beta home videocasettes for $49.95 from FABCO, Box 410125, San Francisco, CA 94141.

TRAMIEL NEWS FROM "ATARI RESURGENCE" PANEL AT WEST COAST COMPUTER FAIRE

Nat Friedlander

"The Atari Resurgence," a panel organized by the San Leandro Computer Club, was a highlight of the West Coast Computer Faire. The April 6 panelists were Atari Corp. president Sam Tramiel, Atari Software Development Vice President Leonard Tramiel, Antic Publisher James Capparell, Bill Wilkinson of Optimized Systems Software and Antic Writer-Award Winner Matthew Ratcliff. The moderator was Antic Contributing Editor David Small, who also demonstrated his plug-in Macintosh ST cartridge at the Faire.

One of first questions from the standing-room-only audience (which included Byte columnist Jerry Pournelle) was about Atari's commitment to the 8-bit product line. The Tramiels stated flatly that Atari would have a major commitment to the 8-bit computer business for "a long time to come." Sam Tramiel specified several breakthrough 8-bit developments coming later this year. These developments include:

- A plug-in 80-column card including a parallel printer interface, due this summer at a price of $79.

- Memory chip expansions such as Apple is preparing for the IIe.

- 500K memory 3.5-inch disk drives for the 8-bit line, with a new Disk Operating System being written by Optimized Systems Software.

- New national mass-marketer distribution agreements -- the first one signed with Toys R Us -- that will also greatly improve the availability of third-party Atari software.

To this discussion, James Capparell added that Antic's recent experience shows the popularity of the new ST line is also bringing about a resurgence of interest in the 8-bit Ataris.

COMPOSITE ST

Sam Tramiel stated that the 1040ST and the newer 520ST support composite color monitors as well as RGB monitors. He said that Atari hopes to be running Lotus 123 on their IBM PC expansion box at COMDEX next month. The Atari 20 megabyte hard disk is just going into production, he added.

Leonard Tramiel said that major improvements are underway in a revised ST BASIC and also in the GEM tools. Sam Tramiel said that the long-awaited AMIE sound/speech chip is "almost alive and well" after extensive re-engineering.

DISK USERS: Don't Let This Happen to You!

Jerry White

[Reprinted from NYBBLES & BYTES, the official newsletter of the N.W. Phoenix Atari Connection, April 1986. The original source was not listed.]

While working on a BASIC program very late one night, I had saved quite a few versions of my program using filenames such as "D:TEST1" and "D:TEST2." Shortly before sunrise, I decided to call it a day. I saved the most current version of my still unfinished program as "D:TEST8." I then realized that I had previously saved a version called "D:TEST9," and that I had better clean up my work disk before shutting my bloodshot eyes.

I called DOS and took a quick look at the directory file. With my fingers running much faster than my brain, I renamed TEST8, TEST9. After pressing RETURN, I realized that I now had two programs with the filename TEST9. Since I was not sure which TEST9 file was the most current, I decided to rename one of them as "TEMP." Much to my surprise, DOS renamed both "TEST9" programs as "TEMP." Now what?

I went back to BASIC and loaded "TEMP." Knowing that the program in RAM was the first version of the "TEMP" found in the directory file, I listed it onto the screen to see if it was the most current version. No such luck. It was the second version of "TEMP" that I needed. Bat's breath!

I then tried to solve my problem by going back to DOS and deleting the first "TEMP." This was just not my night. DOS deleted both my "TEMP" files. I had solved my problem but I was more than a bit cranky. It just seemed to be absurd that DOS should rename more than one filename at a time. Before getting to sleep that morning, I vowed to correct the situation so that it could not happen again.

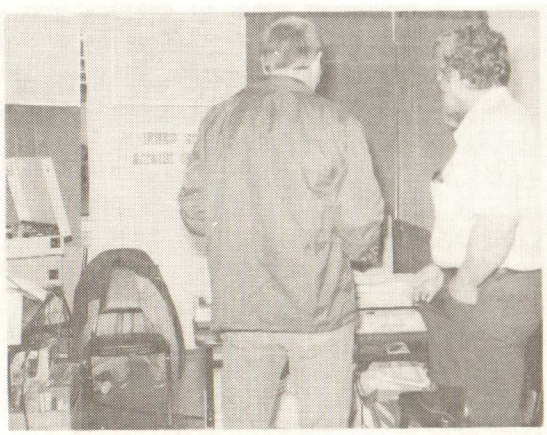
After a quick look at **COMPUTE!**'S Inside Atari DOS, I found that I could correct this problem by simply eliminating one BCC instruction. This can be done using two NOPs. If you'd like to change **DOS.SYS** version 2.0S so that RENAME effects only one file, just follow these instructions:

With your Atari BASIC cartridge in place, boot up using a disk that contains DOS 2.0S. At the BASIC ready prompt, in immediate mode, enter the following commands and then press RETURN.

POKE 3117,234 : POKE 3118,234 : X=USR(8309)

Note that the DOS utilities did not have to reload from disk. Since no deferred mode lines of BASIC were entered and no program was loaded, **DUP.SYS** was unaltered and still in RAM. We simply jumped back into **DUP.SYS** with that immediate mode USR command.

In order to make our patch to DOS permanent, use the "H" function to write DOS files.



ANTIC ONLINE'S REPORTS FROM APRIL 1986 COMDEX

DeWitt Robbeloth, ANTIC Executive Editor

ATLANTA, April 28, 1986 -- COMDEX convened today in this unseasonably steamy southern city to reveal what's new in the world of computers. Thousands of attendees and exhibitors found refuge in the air-conditioned caverns of the huge Georgia World Congress Center, where glittering islands of plastic and plywood formed rookeries for computers and their gadgets.

Against a backdrop of names like Epson, AT&T, Panasonic, Zenith, and IBM, Atari and Commodore waged a battle for 16-bit supremacy. Commodore's Amiga exhibit would have won the prize for "best float" if COMDEX was a parade. This could be seen as a reaction to that company's absence from the last COMDEX in Las Vegas, when Atari scored innumerable hits with its roundup of third-party developers for the ST. This time Commodore answered in kind, with an armada of impressive Amiga programs.

Meanwhile, Atari bolstered its image with a gathering of products for its 8 and 16-bit computers.

8-BIT RELEASES

Though still not yet available, the long-awaited 80-column card -- the XP801 -- was shown for the first time in this country. The card should work with all 8-bit Ataris, including the 400. The XP801, which is about the size and shape of a 3.5-inch disk drive, plugs into a joystick port and drives any monochrome monitor. It also has a Centronics parallel printer port. It will sell for $80 when it rolls out next August.

Two programs will enter Atari's inventory this week, according to John Skruch, Manager of XE Software Products for Atari Corp. The first is Atari Planetarium, a serious astromonical tool and study aid previously announced at the June 1985 Consumer Electronics Show. This program, by Deltron, gives you the universe for a mere $24.95. You can choose any place on earth as a vantage point, then examine the heavens above (and even below) from that position. The view angle can narrow down from 72 degrees to 18, and even look through the earth to reveal the relative positions of 1,700 planets and surrounding stars. Your viewing position is also adjustable plus or minus 10,000 years.

Star Raiders II for the 130XE is also apparently a reality, at $19.95 from Atari. This game is largely the work of Gary Stark and Bruce Poehlman. The protagonist must protect planets and attack ground stations in two solar systems, pitted against more aggressive enemies. A more extensive version of the original Star Raiders will be offered later to ST owners.

Atari is once again showing a dot-matrix printer. The XMM801 will list for $220 and offers both tractor and friction-feed. It connects directly to the computer and needs no interface. It is said to be Epson compatible and is apparently capable of superscripts, subscripts and boldfacing.

16-BIT ANNOUNCEMENTS

New and most interesting in the ST software lineup is OS-9 from TLM Systems, Peasantville, NY. This Unix-like operating system for the ST permits true multi-tasking, while providing access to BASIC, C, Fortran and Pascal.

Mark Williams Company demonstrated its C Programming System, a powerful compiler with a set of advanced utilities designed specially for professional program development with the ST. It will sell for $180 when released in May.

Atari is making a point about the number of programs available for the ST computers, and has issued a $10 "ST Software Catalog." The catalog lists 21 word processors, 16 databases, 7 spreadsheets, 25 financial programs, 16 communications programs, 22 graphics, 10 music, and more than 200 other programs for the Atari ST.

A number of other ST applications were shown today, including a demonstration of Tom Hudson's soon to be released CAD-3D. This was shown at the Antic booth along with a rotating, solid-model version of the logo from START - The ST Quarterly, which Antic will present this June.

The Atlanta COMDEX is one of 35 high-tech trade shows put on each year by The Interface Group, which recently added the West Coast Computer Faire to its lineup. COMDEX is an acronym for Computer Distribution Exposition, and its focus is to serve the independent distributor of computer products, not the manufacturer. Organizers expect 40,000 visitors at the 3,300 booth units, which represent over 700 companies.

SECOND REPORT

ATLANTA COMDEX, April 29, 1985 - Antic Publishing's president, James Capparell, presented the first Antic Awards for Atari Achievement to ten winners at a celebration held here tonight in the Atrium of the spectacular Mariott Marquis Hotel. The occasion also marked Antic's fourth anniversary as Ataridom's leading publication.

About 250 guests representing 50 companies and the Atari user community applauded the winners and shared hors d'oeuvres, cocktails and Antic's birthday cake while enjoying the breathtaking view from the Atrium's skyline level.

The Mariott Marquis is an architectural masterpiece by John Porter in which fifty tiered levels enclose an enormous interior space called the Atrium. The skyline level, where the awards were presented, looks outward at downtown Atlanta and inward to the vast open center of the hotel.

Accepting "Atarian of the Year" award for Jack Tramiel, Chairman of Atari Corp., was his son, Sam Tramiel, President of the company. Sig Hartmann, VP for Atari Software, accepted the "Engineering Award" for Atari's R&D chief, Shiraz Shivji, who was not attending COMDEX.

Sasumo Yamaguchi, President of Star Micronics, accepted an "Outstanding Product" award for his company's Star SG-10 printer. Other chief executives accepting their awards were "Wild Bill" Stealey of Microprose for "Consistent Support," and Michael Reichmann of Batteries Included for "Outstanding Contribution." Dick Dickson, Director of North American Sales for Digital Research, Inc., accepted an award for the GEM interface on behalf of Gary Kildall.

The "Lifetime Contribution Award" to Optimized Systems Software was accepted by OSS's Director of R&D, Mark Rose. The "Outstanding Product Award" for Computereyes was accepted by Digital Vision's Executive VP, John Pratt.

The user community was represented by Mike Dunn, founder of Euguene ACE (Atari Computer Enthusiasts), which was named "Outstanding User Group." "Outstanding Antic Contributor" Matthew Ratcliff could not be present, so the award was accepted on his behalf by Ian Chadwick, another outstanding talent in the Atari world.

Winners Infocom and Activenture (now Knowledge Set) did not attend the ceremony.

The physical awards were each a three dimensional Antic "A" mounted on a teak base that bore the appropriate inscription. They were designed by Jaciow Designs of Palo Alto, CA.

The mood of the gathering was pleasantly self-congratulatory as many veterans of the Atari wars reflected on their good luck, staying power and battles yet to come. The Antic party provided a happy close to the second day of COMDEX here.

THIRD REPORT

ATLANTA COMDEX, April 30, 1986 - Products for the Atari ST computers dominated the Atari exhibit at the Georgia World Congress Center here as COMDEX entered its third busy day. Atari Corp. President Sam Tramiel and VP Sig Hartmann prowled the purple and silver Atari enclave, touching base with the 30 independent software vendors invited by Atari to show products there. According to Hartmann, 2,000 ST developers worldwide are expected to bring a bonanza of products to market yet this year.

CAD-TYPE PROGRAMS

Several graphics products attracted attention. **The Graphic Artist** from Progressive Computer Applications, Inc., claims to be a new category of software, beyond Computer-Aided Design (CAD). While providing full CAD features, **The Graphic Artist** also contains complete business graphics and text-handling systems with built-in and modifiable fonts. Using this product, a single worker can produce professional monochrome documents containing accurate graphic elements to any desired scale alongside any desired text. The package sells for $495 and is available now. Optional command language is $245 additional.

Easy Draw, by Migraph, lacks some of the power of **Graphic Artist**, but only costs $150, while retaining quite impressive abilities to create B&W and color drawings of great accuracy and detail. Not a paint program, it is truly object oriented, and makes its pictures by combining lines and geometric shapes that can be manipulated in many ways. It has limited text-handling (really labeling) ability, and is choosy about output devices.

An unusual CAD product is the **PCBOARD Designer** distributed by Abacus Software. This monochrome program attempts only to facilitate the frequent need to design printed-circuit boards. The program's library contains a reasonable selection of electronic devices, and users can add their own if needed. Move these to

(continued on the next page)

(**COMDEX REPORTS**, continued from previous page) the work area and arrange as desired; specify the connections and they are made automatically. The traces are marked out in several widths with proper spacing. **PCBoard Designer** costs $395 and will be available May 15.

CAD-3D, by Tom Hudson, makes it easy to create three-dimensional objects of great complexity, and examine them from all sides as wire-frame or solid models in monochrome or color under several different lighting conditions. Saving successive frames in RAM or on hard disk enables effective animation of the object. **CAD-3D** will be available May 15 from Antic for $49.95.

FILE SERVER

A file-server system for the Atari ST computers was shown by BMB Compuscience of Canada, Ltd. The server is actually an IBM clone (a Compaq in the demonstration) dedicated to the task. With a 20-megabyte hard disk onboard and a $895 card installed, the server can accomodate 63 computers which must be either IBM compatibles or Atari STS equipped with BMB's interface box. The interface costs $495 and will be available in July. This sounds like an expensive way to set up a local area network, but it is quite reasonable compared to the cost of using all IBM equipment.

When connected to the file server, each computer has its own assigned space that can be protected with a password of the user's choosing. Depending on the permissions of the network manager, each user may also read from or write to other users' space, and even exchange data and programs if the formats are compatible. For instance, the demo at COMDEX showed data from The Manager, running on a Compaq, transferred into **The Manager**, running on the ST. **The Manager** is a full-featured database program, also from BMB Compuscience, that costs $169 for the ST version.

The file server also contains a cassette tape backup for its hard disk. Another tape backup system for the Atari hard disk was shown by Atari. It uses a specially spooled tape housed in a small case and it can back up 10 megabytes in four minutes.

THUNDER

Thunder, from Batteries Included, is a desk accessory for the GEM Interface that checks spelling in real-time. It also expands abbreviations, and analyzes statistics for a given document. The spelling checker's 50,000 word dictionary can be expanded to 70,000 by the user. The program rings the system bell whenever a typed-in word does not match a dictionary word. The writer can then correct any obvious error, or if stumped, call up a sophisticated series of replacement words from the dictionary. One mouse click makes the replacement, and the bell can be disabled if bothersome.

The expansion feature makes it possible to set up several hundred abbreviations (5K worth), which when typed into a document are automatically expanded to full length. For example, BI could stand for Batteries Included. A small repertoire of abbreviations is provided with the program, but the rest must be set up by the user, and of course, no abbreviation can duplicate a dictionary word.

The analysis feature counts syllables, syllables per word, total words, sentences, words per sentence, and performs some tests - such as percentage of words with more than three syllables. It also calculates a FOG index and a Flesch index and tells the writer the educational level required for the average reader of the document.

Thunder is compatible with many GEM-based document programs. It costs $39.95 and will be available July 1.

FINANCIAL MATTERS

Batteries Included also introduced the **Isgur Portfolio System** (IPS) for securities management. This includes complete data for all equity investments, including total value, gains and losses of the portfolio as of the last price updating. A full-featured telecommunications section of the program, called **I*S Talk**, automatically calls Dow-Jones, Compuserve or other services for prices and posts them to the individual security records.

I*S Talk will be available separately from Batteries Included. It features full upload/download, Xmodem transfers, editable capture buffer, user-defined macros, on-screen clock and auto-log. The portfolio program permits "what if" modeling, and tracks diversification graphically. Messages to to the user occur when preset criteria are met (e.g., "signal if stock decreases 10%"). Dozens of special features make IPS a program that must be seen to appreciate. It will be available June 5 for $199.

Dac-Easy is a powerful but inexpensive accounting program ported to the ST from the IBM, in which version it was named Product of the Year by Infoworld in 1985. Amazing as it seems, this fully implemented and integrated "business tool" costs $69.95. It includes general ledger, accounts receivable, accounts payable, purchase order control, billing, inventory and forecasting. It does not include payroll or taxes. It was designed by three CPA members of

the company and is the tool Dac Software Inc. uses to do its own multi-million-dollar-a-year accounting.

OKIFACE

The Plug 'N Print Kit to connect the Okimate 20 color printer to the ST computers was shown by Okidata and is now available for $99. The printer costs $169 without the interface and boasts a bright and true color rendition for the ST. It also prints B&W characters at 80 cps (draft) or 40 cps (NLQ) for low-productivity word processing.

Antic and Analog magazines shared counter space at the Atari exhibit where they distributed free copies of their latest issues. Analog was promoting its ST*LOG, now a magazine within a magazine, and Antic announced its new mag-and-disk publication, START - the ST Quarterly, available June 1.

WRAP-UP REPORT

ATLANTA COMDEX, May 1, 1986 - Synthesized music drowned out the hubbub of COMDEX's final day at the Atari booth as vendors displayed various MIDI-related products for both the XE and ST computers.

Hybrid Arts, from Los Angeles, showed **MIDITRACK-3**, for the Atari 130XE, that allows the player to control 16 separate tracks. The package lists for $374 and includes a MIDI interface for the XE. **MIDITRACK ST**, from Hybrid Arts, is a professional music system of hardware and software that offers composers 60 programmable tracks and discrete control over 16 synthesizers. It costs $575.

Other musical products for the ST included **MIDIPLAY 1**, from Electronic Music Publishing (Santa Monica, CA). This $50 hobbyist tool records and plays back up to 16 channels and requires a MIDI synthesizer. Activision showed the $60 **Music Studio**, an educational and compositional program for the amateur. XLENT Software showed its **ST Music Box**, a MIDI editor and sequencer that can control up to eight channels. It can use either the ST's voices or an external synthesizer, and sells for $50.

Print-Technik of Munich showed a $299 video digitizer (with software) for the Atari STs. The system includes software and a small digitizer box that connects to the computer through the printer port. The digitized image is black and white, with 16 gray levels at 512 X 512 pixel resolution. Buyers must specify if they want the image rendered on monochrome or color monitor in order to get the correct software. The digitizer requires that the subject remain still during a 5-second scanning process.

An animation program called **Make It Move** rolled the dice and tended bets on a full-color simulated craps table. The craps game is being developed for Harrah's casinos to teach patrons how to play, but will be available on disk for $40. **Make it Move** is compatible with all popular ST paint programs, and is available for $50 from Avila Associates (Lafayette, CA).

Hippopotamus Software showed their $140 EPROM burner kit for the ST. Consisting of software and a burner device that plugs into the parallel printer port, the system works with 2764, 27128, 27256 and 27512 EPROM chips. EPROMS can be ganged onto Atari ST cartridge cards, available for $15 each.

Regent Base is Regent Software's $99 relational database. It uses the GEM interface but works very much like dbase II. It uses English commands and has mail-merge with the **Regent Word II** program. A special Bridge program moves data between other databases. **Regent Base** is scheduled to ship on June 1.

The next COMDEX will be in Nice, France, in July. The next trade show for Atari and Antic will be the Consumer Electronics Show (CES) in Chicago, June 1-4, where Antic will present the premiere issue of START, The ST Quarterly.

LOVE YOUR ATARI SPREADSHEET

Donald Forbes

[Reprinted from JACG NEWSLETTER, the official newsletter of The Jersey Atari Computer Group, April 1985, page 24.]

The hottest item in business software today is the spreadsheet. It is the first step toward getting all the paper off everybody's desktop and into the computer.

You don't know what a spreadsheet is?

You can buy **Syncalc** -- a professional documented version complete with plastic wrap -- at our flea market for only $21, as I did, and become a business executive overnight.

A spreadsheet is nothing more than the old accountant's worksheet. But there are a few differences.

The first difference is the size. **SynCalc** gives you 128 columns and 255 rows; nobody has a desk that big.

Second difference is that all the computations are automated. Change one number on the worksheet, and every other related number changes instantly (or at the speed of your Atari's 6502 chip).

Third difference is that you have powerful editing functions for moving and copying, as well as mathematical and financial and statistical functions.

Fourth difference is that you can have multiple worksheets located in different parts of your spreadsheet.

How does it work?

Load the disk. What you see is a set of column headings and row numbers like this:

```
A1
     A       B       C       D       E
1 MMMMMMMM
2
3
```

The cursor (I used MMMMMMMM) now takes up eight spaces in field A1 (the correct technical term is "cell"). With the CTRL and arrow keys you can move the cursor to any location. Notice how the address at top left keeps changing each time you move the cursor.

Everything in a computer must be either a letter or a number. In a spreadsheet, however, you have three choices: (1) letters that make up text, or (2) just numbers, or (3) expressions that can be converted to numbers. You must tell the spreadsheet what you want.

To enter letters, just type the text. **SynCalc** gives you a blue background. If the text begins with a number (like a street number), just begin with a " or quote mark.

To enter a number, just type the number. The SMART way, however, is to adopt the habit of beginning every number slot with a + or plus sign, because that sets up the spreadsheet to expect either a number or a formula (which can eventually be converted to a number). **SynCalc** then gives you a green background.

Note, too, that the cursor remembers the last direction of motion, so that when you fill in one slot it jumps to the next slot in the same direction.

Now that you know the basics, let us set up a simple household monthly budget. It will illustrate the main workings of most spreadsheets (**Lotus 1-2-3** or **Visicalc** or **Framework** or **PC-Calc**). When you have seen one, you have seen them all.

Here is the spreadsheet:

```
      A        B        C        D
 1  Expense  Budget  Actual   Var
 2  -------  ------  ------   ---
 3 Mortgage  832.00  832.00  0.00
 4     Food  400.00  379.66 20.32
 5  Car Pmt  202.30  202.30  0.00
 6 Clothing 120.00   88.04 31.96
 7
 8    Total 1554.30 1502.00 52.30
 9
10This is a sample spreadsheet.
11
```

Type in the headings in row one (hit CAPS LOWR to get lower case letters), and add the hyphens in row two. Then go down column A and add the labels. Notice how the cursor remembers the previous movement. To erase any field, type slash E and return (/E <ret>) to clear it.

Now go to column B and enter the first four numbers. Here we will let **SynCalc** compute the total. What **SynCalc** is looking for in cell B8 is @SUM(B3:B6) which tells it to add the numbers in column B from row 3 to row 6. We could type it in, and it would work. Don't do it.

This brings up an important point. There are two ways to do spreadsheets: the DUMB way and the SMART way. If you expect to get mileage out of spreadsheets, you want to do it the right way and not get into bad habits at the outset. Then when you get involved with the high-powered spreadsheets, you will not have anything to unlearn.

The first DUMB way is to use the OPTION key and the menu to execute your commands. You will notice that each command is interpreted at the top of the screen by a slash and a series of letters, so that /G A1 tells the cursor to GO TO A1. Be SMART and use the slash commands as soon as you can remember them, and use the menu only as a last resort.

The second DUMB way is to complete the formulas by typing in the field locations and thereby run the risk of multiple errors. The SMART way is to point at the field with the cursor, a much quicker and easier and safer way.

Now back to field B8. Type @SUM(and then move the cursor to field B3. Notice how the formula now reads @SUM(B3. Now type a colon and move the cursor to B6. The formula is now @SUM(B3:B6. Add the final parenthesis for @SUM(B3:B6) and press return. The total appears instantly. (Change any number in the column, and the total changes with it. Give it a try.)

Now you can fill in the numbers for the ACTUAL in column C and set up the total the same way. For the VARIANCE in field D3 just type a plus sign (+) and then point the cursor to field B3 and then type a minus sign (-) and then point the cursor to field C3, and press return. Now you can complete column D.

Note the comment in field A10. This is a trick that is not in the manual. You can type as many as 37 characters per line and they will fit on the screen. You can type about 100 characters but then you will have to read the text across several screens. You can use the spreadsheet as a crude wordprocessor. This is a handy documentation tool, if someone else will be using your spreadsheet. You could, for example, fill up the whole first screen with a set of working instructions.

Your budget is ready. What next? One simple command will let you copy the entire budget to the lower half of the screen, so that it could be the model for next month's budget. Another simple command will let you sort the whole worksheet so that the expenses appear in alphabetical order.

SynCalc also works with **Atariwriter.** That demo budget was worked on **SynCalc** and saved to disk (I had a formatted disk ready) as a text file with the name SPREAD.TXT. Then I brought up my **Atariwriter** and loaded SPREAD.TXT and sent it to the printer. This gave me a printed copy of the spreadsheet that I used while writing this article.

What can you do with a spreadsheet?

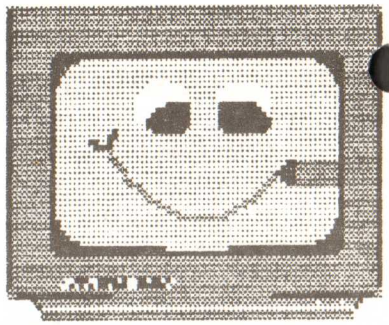
The loan officers at my favorite bank are using PCS on their desk and Lotus to make lending decisions; in a class exercise they were given financial statements for Apple and asked to come up with a bid price for the company as a whole, and given one hour to do the job. The bids ranged all the way from $500 million to $2 billion, but that was not the fault of Lotus!

My friend Hannah Blank had to move twice last year. When the movers arrived she gave them no instructions, but just handed them a set of sheets of paper. The head mover said, "I have been moving people for 20 years, but never saw anything like this!" Hannah had listed every carton and piece of furniture on a spreadsheet, giving room and location in the old house, and sorted in the right order.

People use spreadsheets to calculate income taxes, set up budgets, balance a checkbook, do sales projections, compute financial ratios, do engineering analysis or cost estimates, or keep track of their coin collection. Since you can fit 30 characters in a field, you can also do mailing labels.

You already know how to use the spreadsheet to create outlines for your term papers, and do mathematical analysis, and play the stock market. Why not invent something really way out (a game, perhaps?) and write it up for the newsletter?

ST WORLD



MUSICALLY SPEAKING: ST Notes
Review of MidiPlay

Jim DePorter

This is a review of **MidiPlay** by Electronic Music Publishing House, Inc. This program is a copy-protected key-disk program. It does not use the mouse, but it does use the function keys. EMPH will replace the original disk at no charge provided that the user is a bona fide Registered **MidiPlay** user, which is a really good if you like the idea of a copy-protected key-disk program.

MIDI stands for Musical Instrument Digital Interface. To use this program you need any instrument that recognizes the MIDI standard 1.0 specification, MIDI cables and a Monochrome/Color Atari ST. I am reviewing this on a color 1040ST hooked up to a Yamaha DX100. On to the review.

I enjoy going into the different computer shops and watching how people choose computers. They start out talking about Big Blue compatibility, Commodore's complexity and then ask "What about MIDI?" That's when the salesperson guides the customer over to an Atari future.

The problem has been a lack of software to run Atari's built-in MIDI interface. There are several companies working on software and demos that work through both the MIDI and the built-in music chip are out, but where are the programs?

The race is on and the first program is out. It is called **MidiPlay** and sells for less than $50. **MidiPlay** will record, store and playback anything played on a synthesizer attached to the ST. The disk comes with two demo songs, one by Mozart and the other by Bach.

MidiPlay has three modes: disk access, record, and play. From disk access you can save, load, get a directory or choose one of the other two modes. All of the function keys are represented across the top of screen and the keys that can be used are highlighted.

In the record and play modes, start, continue and stop can be chosen. Start causes the program to start recording or playing from the start of memory. Continue will continue from wherever the program has stopped, and stop will halt either recording or playing. To get back to the disk access mode the Undo key is pressed, and to get out of the program the Esc key is pressed.

Each mode shows the amount of memory used, the amount of memory left, the name given to the current selection, a keyboard that plays along with the music and parameters for playing music that can be set from the keyboard.

MidiPlay does not have any capability for changing music being input from a keyboard. What you play is what you get. If the tempo is off, the tempo is still off when it is played back; if the wrong note is played during recording, the same wrong note is repeated during playback. You are able to mark pieces of music as it is played so that if something does sound good, it can be saved. I cannot play music (I can name that tune if you show me the sheet music). I am interested in a program where I can "program" the music on the screen and hear it played back. **MidiPlay** does not allow me to do this.

I can see a lot of neat things that can be done with this program, like using the program as a teaching aid. It is nice to see a program that repeats whatever is played on a synthesizer, but repetition is only a small portion of the things that can be accomplished with a full-blown MIDI system. I think the price is a little steep for what is offered. If you can't wait **MidiPlay** will get you started using the MIDI system on your ST. It has the possibility to be a really nice program if EMPH adds more capabilities. The two songs on the disk are a good demo of the capabilities of the program. There is also other disks on the market that have more EMPH songs on them, but you need **MidiPlay** to run them and they cost around $20 a disk.

My recommendation is wait, I have seen the future and it is near!

NO HOLDS BARRED COMPARISON: ST Vs. High End 8-Bit Computers

Atari Corporation

It amazes us that some people will still pay $500 to $1000 for an 8-bit computer system, when for the same price they can get a complete 520ST setup that will outperform any 8-bit machine in every measurable detail.

There are two good examples of overpriced 8-bit systems that are still available in today's marketplace: the Apple // series and the Commodore 128. Complete with disk drive, the Commodore is less than $100 below the price of a 520ST, while the Apple actually costs much more -- for a more poorly performing product. How can this be?

Inertia.

Both products are coasting on the existing base of their predecessors. The original Apple][was first sold in 1977, while the C128 is based on both the C64 (1984) and CP/M (circa 1976). The advantage is that both systems are somewhat compatible with a large software base, and are known entities for institutions like schools. But is this really a good thing?

Both machines are designed around what is essentially outmoded technology. Let's face it, the semiconductor field has advanced quite a bit every year since these machines were developed. Chips can now integrate many more circuits than they could a few years back -- one of the main reasons why Atari can make the ST system for so little compared to these "toy" computers. At this time it costs less to design a system around the powerful 68000 chip than it did to build around the simple 6502 or Z80 series a few years back.

MICROPROCESSOR: the ST uses a 68000 chip which handles data 32 bits at a time internally and 16 bits at a time externally. The 6502 and Z80 are limited primarily to 8 bits, so they have to work harder on big operations. above all this, the 68000 works at 8 million cycles per second compared to 1 or 2 million for the 8-bitters. Not only does it work harder, it does the hard work faster.

BUILT-IN SOFTWARE: the operating systems of the Apple and the Commodore are primitive 16K programs compared to the 192K of TOS in the ST. Where the 8-bit systems provide basic input/output functions with a separate DOS, the ST integrates both of these along with graphics features, windowing, menus, and mouse, plus the desktop. The additional programming in the ST makes it easier for users to understand.

MEMORY: the 520ST includes 512K of RAM, where the Apple and the Commodore only provide up to 128K. The ST has big-league capacity for the kinds of problems that you really need a computer for.

VIDEO DISPLAY: the ST gives you 3 modes to choose from, including a special high-resolution monochrome mode of 640x400 pixels, perfect for text operations. Both of the ST's monitors provide unusually crisp and vivid images that the 8-bit machines can't compete with. This is because the "video shifter" chip in the ST uses the latest in technology and operates at an astounding 32 million cycles per second.

SOFTWARE: here's where the public perceives an advantage for the 8-bitters. They have thousands of packages to choose from today, compared to hundreds on the ST. But numbers alone don't tell the whole store. The kind of software we are seeing on the ST is far beyond the capabilities of the 8-bit systems. Word processors use the ST's window environment to provide ease of use that is impossible on the 8-bits -- they don't have the speed or the memory capacity to make it practical. Sophisticated personal and business applications abound on the ST that are completely impossible on the 8-bits. And the rate at which new titles are released for the ST has been far greater than for the 8-bits, so the disparity in the number of titles will disappear very soon.

So, when someone suggests that one of the high-priced 8-bit computers are anything less than relics of a previous age, we just shake our heads and wonder.

OSS PASCAL PERFORMANCE

Ed Seward

[An excerpt from a review of **Personal Pascal** which was reprinted in Neuron, the official newsletter of Austin ACE, May 1986, page 6. Original article from Compuserve.]

Like any person with a new language for their computer, I was anxious to run some benchmarks. In the table (below) are six different time tests. Two of the programs I converted from a review of MODULA Compilers in the October 1985 issue of Computer Languages magazine ("Microcomputer Modula-2 Analysis" by Namir Clement Shammas and Ken Magel). [Modula-2 is basically an enhanced version of Pascal.] Two others are fairly standard but taken from a Turbo Pascal 3.0 review in the February 1986 issue of Byte magazine ("Turbo Pascal 3.0" by Mark Bridger). The magazines gave times for these tests on the IBM PC (with and without an 8087) and one test of MacModula-2 on the Macintosh. I ran the same tests on the 520ST using OSS **Personal Pascal** and also, for comparison, using TDI's Modula-2. As you can see the times are pretty good. The times for the Modula-2 package on the ST are particularly good but note that the file sizes are much larger than those developed using **Personal Pascal.**

FILE SIZES

OSS Pascal		TDI Modula-2	
Source	Execute	Source	Execute
794	4559	732	21682
333	6593	430	21648
339	8447	403	25372
1332	4892	1224	21964
1364	11461	1598	22574

RUN TIMES

Test Program	OSS Pascal 520ST	TDI Modula 520ST	Turbo PASCAL 3.0 IBMPC	Turbo PASCAL 3.0 w/8087	Modula .COM IBMPC	Modula Mcode IBMPC	Mac-Modula Macintosh
SIEVE	7.5	6	13	--	8	123	80
CALC	7.2	3	32	6.5	--	--	--
FLOAT	20.5	20	65	3	--	--	--
SORT	<1	<1	--	--	2	15	30
MATRIX	3.5	2.5	--	--	11	20	13

CURSOR CONTROL FOR PERSONAL PASCAL

R. DeLoy Graham

Last month I mentioned that **Personal Pascal** does not include cursor positioning functions for TOS programs. However, cursor control is easy to implement using VT52 terminal control codes. Most of these code sequences begin with the escape code (Chr(27)). Try some of these procedures:

```
PROGRAM Hello;
VAR Reply : CHAR; (* dummy to hold screen *)
PROCEDURE Clear; (* clear the screen *)
BEGIN
   WRITE ( Chr(27), 'E' );
END; (* Clear *)
(*********************************************)
PROCEDURE CursorOff; (* disable cursor *)
BEGIN
   WRITE ( Chr(27), 'f' );
END; (* CursorOff *)
(*********************************************)
PROCEDURE CursorOn; (* enable cursor *)
BEGIN
   WRITE ( Chr(27), 'e' );
END; (* CursorOn *)
(*********************************************)
PROCEDURE Position ( x, y : INTEGER );
BEGIN (* position cursor *)
   WRITE ( Chr(27),'Y',Chr(32+x),Chr(32+y) );
END; (* Position *)
(*********************************************)
BEGIN
   Clear;
   CursorOff;
   Position ( 10,34 );
   WRITE ( 'Hello, World!' );
   READLN ( Reply );
   CursorOn;
END. (* PROGRAM Hello *)
```

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245-4888

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6224 SE Main (residence)
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1504 Mill Plain Suite C
Vancover, WA 98684
(206) 254-5849

Computers, Etc.
1513 NE 122nd (Halsey)
Portland, OR 97230
252-0179

***Computron Business Systems**
1139 SE 11th
Portland, OR 97205
224-2220

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11705 SW Pacific Hwy
Tigard, OR 97223
639-6780

Creative Computers
3275 SW Cedar Hills Blvd
Beaverton, OR 97005
644-1160

Fred Nickel's Computers
15431 SE 82nd Drive
Clackamas, OR 97015
657-5535

High Tech Toys
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Clackamas, OR 97015
646-3950

****IB Computers**
1519 SW Marlow Ave
Beaverton, OR 97005
297-8425

Toys R Us
Jantzen Beach: 289-4691
Tigard: 620-9779
Milwaukie: 659-5163

WW Telephone Systems
Residence
ST software only
282-6223

Authorized Service Centers

Micro Care
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Portland, OR 97232
230-0770

NW Computer Support
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