

P.A.C.



A.C.E.

Portland Atari Club and the original Eugene Atari Computer Enthusiasts  
A USERS GROUPS NEWSLETTER TYPESET ENTIRELY ON THE ST COMPUTER

# COMPUTER NEWS

NOVEMBER, 1988

PORTLAND OR

ARTICLES  
REVIEWS  
PUZZLE  
ADS  
LISTINGS  
NOTICES

CIRCULATION  
1500

## The History of ACE Mike Dunn,

In February of 1980 was my birthday and I decided to buy a new computer. I had been interested in computing for quite a while, and had a programable game machine made by Bally with a BASIC cartridge; but now I was ready for bigger and better things. I had looked at the Apple, but a new computer called the Atari caught my eye. Of course, in Eugene, Oregon, a town of less than 100,000 people, there were neither Apple or Atari dealerships at the time. There was a computer store called the "Oregon Real Computer Company" that sold CP/M business machines and had just decided to carry the Atari. A factory rep by the name of Bridget Swartz from Portland came to Eugene to demonstrate the new machine, then only out for a few months. I was impressed; and at the special introductory price of only \$1200 for an 8K Atari 800 I got a free 16K upgrade, then worth \$199. The documentation that came with the machine was a rough draft, poorly photocopied, of some information on how to use and program the machine.

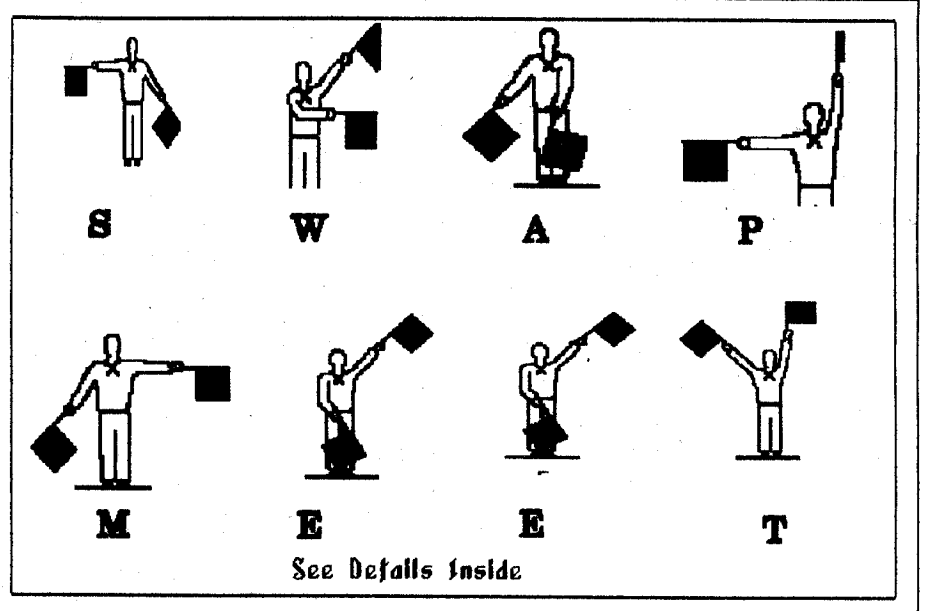
There was no software available except for the BASIC cartridge and Star Raiders. I started to teach myself to use the beast. There was so much to discover! Atari started a help phone number, and in calling, I soon found that I knew as much or more than—they pretty soon they were calling me for advice. I discovered

more and more of the capabilities of this fantastic new machine. After a few months, several others in Eugene bought their Atari, and I became the resource for the community.

By the summer of 1980, all the new owners met together and decided to form a user group—the first for Atari. There were other computer user groups in the area, but they were all "hackers" and experts—we wanted a group that was family oriented to include woman and children at all levels, an idea that was radical at the time since woman supposedly didn't like computers. We elected officers—Stacy Goff for President, B.J. Knoll for librarian, and I (Mike Dunn) as Editor of a Newsletter, and shortly after, the first Atari Computer Enthusiasts Newsletter was out.

In the first couple of years, it was sent to anyone free of charge who wanted it, as well as all the computer magazines I could think of. The first issue feature an article by me on converting Microsoft BASIC to Atari BASIC, since any program listing available was in MicroSoft and I had spent many hours learning to convert one to the other. There were no books or info on how to do so, but since Atari Basic was somewhat like Hewlett-Packard BASIC, I found the first edition of David Lien's "The BASIC Handbook" to be helpful even though it did not mention Atari BASIC.

The various computer magazines were delighted to hear of a user group for the Atari and our newsletter; they began to publish articles about us—first Micro, the 6502 Journal, then Compute! then Byte— and the requests for



membership and the newsletters poured in from all over the world—remember, we didn't charge at the time.

After a series of club meetings—we numbered about a dozen at the time, including several woman—we decided to become the user group for the Atari owner in small towns and foreign countries that did not have a local group to turn to, and try

and help them through letters, phone and the newsletter. Several large cities were by then forming their own groups and asked us to help them get started. Some of these groups liked our name and asked permission to use it; since everything we did was "public domain" we agreed so SPACE, MACE, PACE and others were formed.

The newsletter was growing larger in number of pages and number of members, and Atari finally released their printer. I bought one of the first ones for about \$800 plus \$300 for the interface, I believe, but of course there was no wordprocessor, so I wrote a primitive one which we used until the first commercial one

came out (Text Wizard), sent copies to other newsletters, and our program exchange library as well as newsletter exchange began.

By January of 1981, we had over 300 members, Atari was calling us often to keep us updated on all the news and rumors, and commercial software review copies (even hardware) were pouring into ACE from all over.

We also had the first regional Atari show and conference in Portland, Oregon then, with over 150 users from all over the Pacific Northwest. There were seminars from Atari Company experts, including Pam and Dale Yokum, VisiCalc was introduced (the first major piece of software for the Atari), and a number of vendors showing their wares—This was the first Atari show in the U.S. The Feb 81 issue reported the show, had the first major article against piracy, and a long article on how to form a user group to aide others and ourselves, since requests for such information was pouring in every day.

By now the newsletter was  
continue on page 4

### INSIDE THIS ISSUE

#### ARTICLES

THE HISTORY OF A.C.E., MIKE DUNN..... Page 1  
RUMORS, CURTIS VERDEL..... Page 5  
XL POWER SUPPLY MOD, TRAVELER..... Page 5

CALENDAR..... Page 12

CLUB NEWS & ANNOUNCEMENTS..... Page 2-3

#### REVIEWS

BUMPAS REVIEWS, JIM BUMPAS, A.C.E..... Page 7  
Easy Tools, Global Commander, Heroes of the Lance  
Scan Art, The Equalizer, Warship  
CATALOGERS, DOUG ATKINSON..... Page 9-11  
I.B. DRIVE, PAUL MACHIAVERNA, JACG..... Page 6  
ERGO STICK, DAVE ST MARTIN..... Page 6  
GATO, DAVE MOORE, PAC..... Page 8  
TURBO, PRESS RELEASE..... Page 8

PORTLAND ATARI CLUB  
P.O. BOX 1692  
BEAVERTON, OR 97005

BULK RATE  
U.S. POSTAGE PAID  
BEAVERTON, OREGON  
PERMIT NO. 242

Portland, OR 97229  
DEC88

# PORTLAND ATARI CLUB

This newsletter is written and published by members of the Portland Atari Club (PAC), a group of people with a common interest -- the Atari Computer. All articles are written and donated by members or are reprints of public domain material from other groups. Opinions expressed are those of the authors and do not necessarily represent the opinions of PAC or those of any other organization. Material appearing in this newsletter may be reproduced for non-commercial use, providing credit is given to the author and PAC or other originating group. Commercial use must be coordinated through the editor. Material for publication may be submitted either on disk as non-formatted 8-Bit or ST ASCII files, or on hard copy (printed, typewritten, or legibly handwritten). Media may be sent to the editor at the address below. Contact the editor for instructions on uploading submissions to the PAC BBS.

**MEMBERSHIP**

Membership is \$25 per year and includes a mailed subscription to this newsletter and access to members-only functions, such as downloading access to BBS files. A membership application is printed in each issue of this Newsletter. General meetings are open to the public and start at 6:30 p.m. on the first Monday of each month (Except in case of holiday.) at the NW Service Center at NW 18th and Everett in Portland. Exchange newsletters, article, correspondence and ads should be sent to the following address:  
Portland Atari Club, Attention: (appropriate board member),  
P.O. Box 1692, Beaverton, OR 97005.

**ADVERTISING RATES:**

Full page - \$80, half page - \$40, quarter page - \$20. Ads must be prepaid and a 20% discount if 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 10th of the month prior to publication. Please contact Teri Williams (503) 771-7337 on all matters pertaining to advertizing.

**CLUB OFFICERS AND BOARD MEMBERS**

President.....	Bill Pike	- 646-4471
Vice President.....	Brian Hunt	- 289-3954
Secretary-Treasurer.....	Dutch Leonard	- 665-5637
Membership Secretary.....	Paul Karczag	- 256-4199
ST Program Director.....	Nabil Pike	- 646-4417
8-Bit Program Director.....	Paul Gittins	- 667-2403
ST Disk Librarian.....	Perry Bailey	- 287-8903
8-Bit Librarian.....	David Moore	- 297-7223
Sergeant-At-Arms.....	Randall Leong	- 246-6348
BBS Director.....	Melvin Waller	- 230-0248
Newsletter Editor.....	Teri Williams	- 771-7337
Advisor.....		

**The Pres's Column**  
Bill Pike

Right now you are probably asking yourself, "Why am I reading this?". If you are I don't know if I have a answer for you. I hope it is because you are interested in what is going on in the club and the future plans as well as past accomplishments. Also everything that is going on in the club both in the membership, the board, the local computer world, and the ATARI world in general is printed in the newsletter. this is your window as to what is going on and what is happening. Anyhow I'll try to keep things short this time.

The upgrades on both BBS's have been completed. I hope that you find that BBS #2 is much faster and friendlier, I am sorry that you will be assigned a password instead of picking your own but that is the way the program works. Also currently in the works is a XModem CRC module for the program. You are currently limited to the old type of XModem. It will be necessary to change the setup for file transfer on your software to standard Xmodem to transfer files to and from the BBS. That should take care to this minor problem. All in all the board is only about 20 times as fast as it was and has about 20 times the storage area.

The DeskJet printer has been purchased and is on line. This newsletter is the first to be printed on it. This is also the first edition of the Combined PAC/ACE newsletter, what do you think of the Masthead? Teri Williams did the design.

Both Migraph and Supra will be at the November SwapMeet. LET'S EVERYONE SHOW UP FOR THIS MEETING AND HAVE A BIG TURN OUT!

I know that I don't have to ask for a big turnout for the December meeting. THERE WILL BE FREE FOOD! There is no computer user that I know of that will turn down goodies. We are still hoping that ATARI will be at the December meeting. There have been some requests

to have Disk Sales at the December Meeting, what do you think?

The current board members have asked me to submit their names as candidates for their board positions with two exceptions. David Moore has asked to be considered for Special Projects Director only, he wishes to release the 8-Bit Librarian position which he also holds. Perry Bailey doesn't wish to run as ST-Disk librarian next year. This would leave 2 board positions open on the board for next year if all of the current board members are re-elected, by the way any member can run for any position on the board and I hope that many members do. Anyway the current board would like the opportunity of serving you for another year.

I would like to remind those who wish to be candidates for board positions for next year to turn in their articles to the newsletter editor before the end of the November SwapMeet. IF YOU DON'T TURN IN A ARTICLE YOU WON'T BE CONSIDERED A CANDIDATE. YOU MAY ALSO SUBMIT YOUR ARTICLE VIA EITHER BBS PRIOR THE THE END OF THE NOVEMBER GENERAL MEETING OR GET THE ARTICLE TO THE NEWSLETTER DIRECTOR PRIOR TO THAT TIME.

I'll look forward to seeing you at the SWAPMEET and the Christmas Party.

**The Prez**

Newsletter

Deadline

November 10th

**PAC HELP HOTLINES:**

<b>BBS USAGE</b>	<b>dBASE III</b>
Steve Billings 246-1751	Calvin Partridge 297-3641
Melvin Waller 230-0248	
<b>ST LOGO &amp; C</b>	<b>PASCAL</b>
Randal Schwartz 626-6907	R. Deloy Graham 649-6993
<b>DOS Operation</b>	<b>ST Graphics Adv. games</b>
Wayne Winterbottom 667-6073	Jim Miller 641-6356
<b>dBMAN</b>	<b>ST GENERAL</b>
David Addison 645-6985	Chuck Hall 626-3717

8-BIT & ST  
DOOR PRIZES

**PAC  
SWAP-MEET**

**MONDAY, NOV. 7th**

6:30 PM

**NORTHWEST SERVICE CENTER**  
1819 NW EVERETT, PORTLAND  
(LOTS OF FREE PARKING)

FOR INFORMATION CALL BILL PIKE 646-4471

BOARD MEETING MINUTES  
10/18/88

GENERAL MEETING  
MINUTES OF 10/8/88:

The General meeting opened at 7:40pm.

There was discussion regarding the amount and type of notification given the membership on Bylaw Elections. The proposed amendments to the Bylaws, as printed in the September newsletter, were accepted by a greater than 3/4 majority of members present.

The purchase of a HP Desk-Jet Printer, for the club, was discussed and approved by a majority vote.

Having a Christmas party for the December General Meeting was approved by majority vote.

The meeting ended at 8:30pm.

BOARD MEETING:

Opened at 7:45pm

ABSENT: Nabil Pike (ill), Perry Bailey (overslept), Teri Williams (ill)

REPORTS:

PRESIDENT:

There were four bids submitted on the HP printer. These were opened in the presence of the Sec-Treasurer. Sears Business systems won with a low bid of \$715. The printer was purchased and is now in the hands of the newsletter editor.

It was announced that all board members who wished to run for re-election should submit their articles for the newsletter prior to the end of the November General Meeting.

VICE-PRESIDENT:

Nothing to report.

SEC-TREASURER:

Old Balance 9/6/88 2755.28

Expenses Newsletter	1323.00
Room Rent	150.00
8-bit Raffle	14.95
ST library	419.00
BBS Expenses	164.42
8-Bit library	70.00
Special Projects	60.00
Misc. Expenses	19.00

Total Expenses 2220.37

Income 242.00

Current Balance 776.91

The matter of Non-profit status with the IRS as well as tax returns is still under investigation.

MEMBERSHIP SEC.:

3 memberships expired, 4 memberships renewed, 2 new members. TOTAL +3.

ST PROGRAM DIRECTOR:

No Report

ST DISK LIBRARIAN:

The disk orders for IB & IB2 are complete. 300 blank disks were purchased.

8-BIT PROGRAM DIRECTOR:

The MIDI demo from the last meeting will be re-scheduled for next year.

8-BIT DISK LIBRARIAN:

Several new disks are in the works for the Swapmeet. 200 blank disks were purchased.

BBS DIRECTOR:

Upgrade for BBS #1 is completed, 20meg hard-drive.

Upgrade for BBS #2 is almost complete, there is still a problem with the modem not hanging up the phone every time after logoff. BBS #2 now is running on BBS Express Program with a 20meg hard-drive and it is FAST.

SPECIAL PROJECTS:

Both Migraph and Supra will be at the Nov. SwapMeet.

Migraph will be Demo-ing EasyDraw and the associated programs. Supra will be there with their 10meg removable floppy disk and the 8-bit networking system.

A invitation has been sent to ATARI to attend the December General Meeting. The text of the letter was read.

NEWSLETTER EDITOR:

She has the new printer and is very pleased. She said that she will continue as Newsletter Editor until someone takes her HP away.

SGT. AT ARMS:

No Report

OLD BUSINESS:

Both Migraph and Supra will be at the Nov. SwapMeet.

The Board discussed refreshments for the Christmas Party.

It was decided to do our own

refreshments rather than have them catered. The final plans will be approved at the board meeting in November.

NEW BUSINESS:

The Sec.-Tres. reported that he is checking with the IRS to ascertain if we have federal non-profit status, also, what taxes, if any, the club owes.

The board discussed having inexpensive Business Cards printed for next years board members, the president will investigate and report back.

It was discussed that a folder containing all the dates and requirements for the government as well as any policies be prepared for the succeeding boards. The president will investigate and report back.

All Current members, with the exception of Perry Bailey, asked to have the President submit their candidacies for their current board positions.

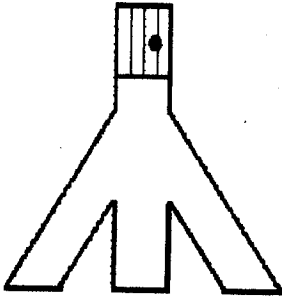
Dave Moore asked that he be considered for the position of Special Projects only.

NEXT MEETING:

November 15th at 7:30pm at Teri Williams House.

The meeting closed at 10pm.

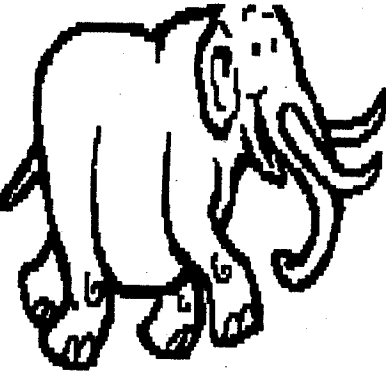
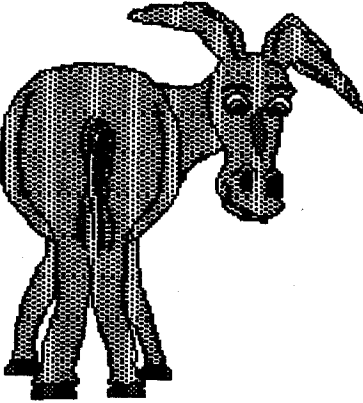
Respectfully Submitted:  
Paul Karczag & Bill Pike



BBS'S

PAC BBS #1	Steve Billings, Sysop	(503) 245-9405
PAC BBS #2	Mel Waller, Sysop	(503) 238-7130
ACE BBS	Eugene, OR	(503) 343-4352

BBS'S are on-line 24 hrs.



Don't Forget to

VOTE

PORTLAND ATARI CLUB

Please fill out the following information, then forward annual dues of \$25.00 to:  
(Renewals are \$20.)  
NEW: Newsletter only (year) \$10.00

MEMBERSHIP APPLICATION

PORTLAND ATARI CLUB  
Attn. Membership Secretary  
P.O. Box 1692  
Beaverton, OR 97005

RENEWALS  
\$20.

NAME: \_\_\_\_\_

STREET: \_\_\_\_\_

CITY: \_\_\_\_\_

PHONE: \_\_\_\_\_

8-BIT OR 16-BIT \_\_\_\_\_

FAMILY MEMBERS NEEDING CARD:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(FOR OFFICAL USE)

EXPIRATION DATE: \_\_\_\_\_

DATE RECEIVED: \_\_\_\_\_

CARD SENT: \_\_\_\_\_

CHECK? \_\_\_\_\_ CASH? \_\_\_\_\_

## History ..... Continued

carrying type in programs from members all over; games, utilities, music, as well as articles and news. In April 1981, several of us went to the SF Computer Faire and spent a day at the Atari headquarters where we were treated royally by many bigwigs and toured the plant, and spend much time with Cris Crawford, the person who developed the use of player-missile graphics and a genius programmer. At the Computer Faire we met many new vendors, including Bill Wilkinson of OSS, and formed friendships with Atari Enthusiasts from all over. We grew and grew- every day there would be letters from all over the world asking for information about ACE or with checks enclosed for membership or library disks or tapes of programs. Articles also poured in from all over, and in June of 1981, the first of many, many articles and programs from Stan Ockers of New Jersey. The first was an article on the use of Player-Missile Graphics and a Lunar Lander program to illustrate how to do things. Stan really changed us and made ACE famous-not only would every issue for the next few years have a wonderful article on programming, but would have almost to full commercial quality programs in BASIC illustrating how to do it! No one else had that expect for a commercial outfit called Softside. In this issue also started reviews by the very colorful reviewer Marc Bennioff from California- his reviews were truly "awsome" as Marc would say.

By October of 1981 our newsletter was 16 pages long, of course with no advertising, and Jim Bumpas became the assistant editor. Articles were pouring in from all over the world and we continued to grow and grow; many of our members were members of large city groups but no one yet had a newsletter like ours, except for MACE. The next big event was the ACE BBS started in January of 1982, and now I was the Editor and the Sysop. Jim Bumpas became the Co-Editor, and made the newsletter much more attractive and larger, included graphics and really improved everything. Stan had sent in some of his real classics- TinyText, Atrain, Doggie, Chicken, and Bats.

We were starting to have some significant hardware articles including modifying disk drives, a cassette interface, and others. Ruth Ellsworth started writing the first of a series of articles and programs in the style of Stan but in PILOT and LOGO, and more educationally based. Sydney Brown from Australia began sending a series of games in BASIC that were very similar and sometimes better than commercial ones. The listing would get on BBSs all over with our name and address, and memberships continued to pour in. With Ockers, Brown and Ellsworth having in each issue fantastic games, utilities and tutorials, everyone wanted our newsletter and everyone wanted to reprint them- we helped more and more user groups start. Another first for Atari Newsletters- we started having it typeset, so we could use smaller type and cram more in the 16 page limit. It cost us \$150+ a month for the typesetting, but saved the

extra postage needed if we got larger; with the many issues being printed then, the cost per issue was very little.

In early 1983, Atari asked us if they could use Atari Computer Enthusiasts for other users groups- we agreed, but they became to aggressive and at one point, required all user groups to be called Something Atari Computer Enthusiasts to get support from Atari! That created a lot of hard feeling as many groups did not want to change their name; and of course we were appalled- finally Atari relented and made it optional; although there are still many ACEs, most were formed with our help before Atari got involved.

The May of 1983 issue feature a full scale drawing program with a printer dump by Scott Berfield of Chicago called GTIA Sketchpad that riveled commercial programs. By February of 1984, Stan had sent a wonderful program in BASIC for every issue since June of 1981 and he was getting tired of it. He and the newsletter then discovered the new language by OSS called ACTION! and Stan took off again- we not only had many new wonderful games and tutorials in a new language, they were of machine language speed.

ACE continued to be the best bargain around. We were loaded with money, and all was going well. When Warner Brothers sold Atari, things began to fall off, but in the Fall of 1985, the first ST's arrived and the excitement seemed to be back. Ralph Walden was active, first writing a C language for ACE, then a BBS program, which he ran for ACE and continually de-bugged and trouble shot. We had the best BBS anywhere then. But now things started to change. The many Atari User groups we had helped start, as well as the others began to grow and improve. Although most were locally based, with a large and dynamic local group available, our members stopped renewing and joining- they could get the support and the best of articles from ACE locally with their own newsletter. Many small towns started to have active groups. The need for ACE out of our local area was demishing.

Our wonderful out of town and out of the USA contributors such as Stan Ockers and Sydney Brown stopped sending articles and programs, so we began to reprint from the many excellent newsletters we receive each month. Conversely, our local group began to grow and our meetings improved. To save money, we went to bulk mail instead of first class. Expenses grew, membership went down, and library disk sales fell and fell- since most of the programs could be obtained from our or other BBSs, why send money for a disk of programs? We were honored by ANTIC!, getting the first Outstanding User Group Award, but it did not help.

In spite of all this, the newsletter continued to improve and improve. In early 1987, we bought one of the first copies of Publishing Partner, Buddy Hammeton became the "Production Editor", and, using PP, greatly improved the appearance of the newsletter, using a laser printer starting in the March of 1987

issue- it was beautiful, and our typesetting cost went from \$160 the issue before to \$18! As we continued to improve the newsletter, membership renewals and disk sales continued to plummet, and our fairly large bank account began to shrink for the first time.

By this time, it was also rare to get review copies of anything since there were so many groups, the vendors could not send them out. Our fixed expenses- printing, postage and phone bill for the BBS continued to climb. We started putting the newsletter out every other month to save money- not because of lack of material. Ralph Walden moved to Seattle, and it became difficult to maintain his BBS program because of equipment and software problems. Most of the BBS equipment is on permanent loan from our president, Kirt Stockwell, and the club doesn't have the money to repair it. Many people have spent hours trying to get things to work correctly, finally, with the tremendous efforts of our new Sysop, Eric Gustason, all is well again. There continues to be enthusiasm, interest and energy in Eugene for ACE, but we are almost out of money. What next? In the short term, Computer Palace went out of business and donated much software and hardware to ACE, which will be sold at our July picnic and swapmeet, raising some money. In the long term, we have to make changes, as it will be impossible to continue to publish the newsletter on a regular basis, but the local club, the extensive program library and a working BBS will continue.

## The Future

The ACE Board, after discussing the above problems for over a year, decided to approach our friends from the Portland Atari Club to see if we could come to a solution that would be good for everyone. Recently, the Portland group (PAC) has started publishing their newsletter in a newspaper format with many pages, and have done a wonderful job with it, but because it is so large, they have had some problems getting enough articles from their members. We have many authors and articles, but not enough members to support a newsletter. They print 1500 now. I went to their last board meeting, and they agreed to let us become part of their newsletter, similar to the way that Current Notes and SPACE newsletters support several clubs. There were also representatives from an ST Club who would like to do the same, so we will now have an Oregon newsletter, in newsprint and larger than now. PAC also graciously agreed to honor all old subscriptions until they run out.

Renewals will be \$25 a year, part of which will go to ACE and part for the PAC Newsletter, members will have access to the two PAC BBS's and ACE BBS.

-Mike Dunn, ACE Co-Editor

Footnotes from  
Jim Bumpas:

My analysis of the problems of our newsletter is slightly

different than Mike's. It is true that the multitude of local Atari Clubs and their newsletters provide services to their members which were met by the ACE Newsletter for a long time, and these services made much of our use to these members superfluous at best.

But this excuse for our demise does not explain how some newsletter happened upon (or deliberately chose) forms with which they have prospered. Note especially Current Notes, Puget Sound, and now Pac. We often discussed making similar changes but always chose not to. We never had a majority in favor of advertising, or any other change which might have put ACE onto the genre defined by Current Notes, for example.

On the other hand, if Atari had been able to maintain a presence in the US market that they had some before 1984, we might well have continued to prosper as before. There would have always been enough new users to support us and all the other newsletters around.

But the fact is, the arrival of the ST doomed our method of producing a newsletter. We wholeheartedly embraces the new technology, becoming increasingly unable to support the 8-bit user which formed the majority of our support. Our 8-bit supporters went elsewhere; to others newsletter, to other computers, to other pursuits (putting their Ataris in the closet). And the ST didn't sell fast enough in the States to replace our lost subscribers with 16-bit supporters. Our method of producing a newsletter depended upon Atari Corp. and the commitment they could make to the US market. Atari Corp. decided not to focus on the US market for profitability reasons, and so all of us here have suffered to some extent. For the very conservative publications like ours, it has meant the end.

But the Atari Community does have several strong, and forward-looking publications which will carry us all through these thin times. The Portland Atari Club has such a publication. If we all continue to support these progressive publications we'll survive this period with an infrastructure which can meet the needs of future Atarians as our community continues to grow. Hopefully, Atari Corp. will devote the resources to the US market to begin to regain the market presence they once had.

Jim Bumpas, ACE Co-Editor

On Behalf of the PAC  
Board and  
Membership

WELCOME  
A.C.E.







## News from the rumors mill.

Well, things have been on an upswing for the 8-bit computer systems lately. The big news is about the two new operating environments that are scheduled from release this July and September. The first is called Diamond (tm) and is a graphics operating system. Some users are familiar with a piece of software called RAOS: the Rat Actuated Operating System which was nothing more than a fancy graphics DOS menu, not much more. Diamond on the other hand is an operating "System" or "Environment" that will control windows, dialog boxes, icons, fonts, etc... In a conversation with Alan Reeve, the author of Diamond, he mentioned that the packages would cost \$29.95, I say packages because along with Diamond will be a developers kit for designing software which will run in the Diamond environment. Also to be released along with Diamond will be a painting program and a wordprocessor rumored to have multiple fonts. No release dates have been set, but also scheduled are several programming languages and a desktop publishing program. Alan Reeve is also the author of News Station, one of the first page designing programs, perhaps the Diamond Publish program will be a souped up version of his News Station.

And in the other corner of the ring is STjr by Merrill Ward & Associates. In a brief interview with Mr. Shelly Merrill I was able to find out that the STjr GOE is a 'ROM' based program. This will allow 400/800 users to be able to utilize this software, Diamond unfortunately uses the extra 16k of the XL/XE machines. I asked Mr. Merrill what his company would due in the event that the GOE cart. has a bug in the software or they decide to update their package and he commented that STjr carts. would be under an "exchange" agreement. However I'm sure there would be a small charge for an update exchange though. The GOE cart will have a built in Paint Program and Wordprocessor. Support disks for additional fonts would be sold later. Also in the works is a terminal program and here is a key note for XEP80 users, Merrill Ward Associates is working closely with Atari and will be producing GOE based XEP80 column support, GOE will be using ADOS and is rumored to also have possible SpartaDOS support (this is yet unconfirmed).

Both companies have DEMO disks, the Diamond demo is not yet available and is expected around mid July, the STjr GOE is available right now for \$5.00

### DIAMOND(tm)

Alan Reeve  
312-393-2317

Packages are \$29.95 and COD orders are being taken now, according to Mr. Reeve packaging is being done and shipping is expected by July 15

### STjr (GOE)

Merrill Ward & Associates  
619-328-8728

Palm Springs, CA 92262

The final version in ROM won't be available until September, a disk based version is available for \$59.95 and a DEMO disk is available for the first 500 users for \$5.00

Speaking of operating environments, there was a quick surge of talk about MTOS (Multi-Tasking Operating System) unfortunately MTOS only works effectively on a 130XE with at least 256K and will only allow 16K programs to run, this restriction might be a big reason why no one has heard much from MTOS or its author for sometime now. With hope, perhaps a new version that could support 32K or more per program would have the MTOS environment quite a bit. Best wishes and success to MTOS

Sales of the XE-GS are steady and high, sales are rumored at well over 1,000,000 units and Atari is promising harder hitting advertising for its new 8-bit system. More and more 'new' games have been appearing, they include Battlezone, GATO, Barnyard Blaster, Crossbow, Commando, Airball and here's one of interest to Dungeons and Dragons players: Dark Chamber. Another bright ray of hope at Atari is Nolan Bushnell. For those new to Atari's or unfamiliar with the name, Nolan Bushnell created and founded Atari in 1972 with his first video game called Pong, Atari started as a \$500.00 endeavor and Bushnell sold Atari to Warner Communications for \$24 million. Well Mr. Bushnell has been commissioned by Atari to be a Software consultant to help design 76 new games

for the 2600, 7800, and XE systems. Now you say 2600??? They're still selling??? As a matter of fact, approximately 1,000,000 a year and there are approximately 8 new titles out and 2 flashy commercials which can be seen in the afternoons showing off what that 4K bank switching VCS can do. The 7800 is doing quite well also, Epyx just released World Games and Street Games, Atari has several new titles out for it and more are on the way.

A little unknown printer, for those not aware of it, with zero fanfare, announcement or reviews. Atari released the XDM121 printer several months ago. It is actually a superb printer, it puts the 1027 to shame (though that is not a hard task in the least) the XDM121 produces high quality typewriter style printing at a slow 12 characters per second (CPS), its \$159-\$189 price tag is a bit hefty but is worth it for the quality print.

An added note for those users who endeavor to dig up any little secrets about Atari, here's a tid-bit: did you know that if you dig up an old 1983 Atari 2600 games catalog and look at the Soon to come section of new Hardware items, there is one item in particular: The Voice Commander, the casing is the exact same case now being used by the 2600jr model Atari Corp has been selling for the past couple of years. I know its not much but some users find it useful.

Ok, thats it for now, more

info, dirt, gossip and whatever else I can dig up as soon as it comes along. Just remember, things are looking up for 8biters, keep the faith and keep an eye out for new software and hardware for the 8bit line.

Curtis Vendel  
(VIA The Earth Access Center)

=====

## XL Power Supply AtariTech BBS

The power supply for the Atari XL/XE computer is notorious for its ability to "fry" itself at the time that it is SURE to cause the most aggravation. Not to mention the aggravation when you open the power supply with the intention of repairing it. The transformer is "potted" - a thick, waxy material is poured into the power supply, making it impossible to repair. An inexpensive alternative power supply is easy to make.

### What You Need:

Soldering Iron and Solder

Wire Cutters and Stripper

Heat Shrink Tubing

DC Supply - Radio Shack  
# 277-1022

5-Pin DIN Plug -- Shack  
# 274-003

Instead of the 5-pin plug, you can substitute the power supply cable with the 7-pin power plug from the bad power supply - this is preferred.

### How to Build It:

Cut off the plug of the power supply. Remove approximately 3/4 of an inch of the outer insulation of the wires. You should see four colored wires inside the supply. Remove approximately 3/4 of an inch of the outer insulation of the wires. You should see four colored wires inside the cable. Cover the yellow and white wires each with a short piece of shrink tubing and shrink them over the ends of the wire. These are the -5 Volt and +12 Volt wires - you will not need either of these. Next strip about 1/8 inch of insulation from the red and blue wires - these will be soldered to the plug. Be sure to slip the outside cover of the plug over the wire BEFORE soldering, and short pieces of shrink tubing over the blue and red wires (but don't shrink it yet!). Also a larger piece over all four wires would be recommended.

Solder the blue wire to pin 3 on the plug. Solder the red wire to pin 1 on the plug. Be sure that you look carefully at the plug - the pins are NOT numbered consecutively!

### Pinout (Solder Side):

2	
4	5
1	3

After soldering the wires in

place, slip the shrink tubing down over the loose wires. Put the metal shield over the plug and crimp it to the wire. Finally, slip the outer cover into place. That's it!

Instead of the 5-pin plug, you may wish to use the cable from the old power supply with the 7-pin plug on the end. This is the best way, for this reason. Atari purposely put a 7-pin plug on the power supply, so that it could NOT be plugged into the 5-pin video jack, which would very likely damage the computer.

The 5-pin plug will fit into the 7-pin jack, but you loose the fail-safe feature built in.

To use the old cable, strip back about 1/4 inch of insulation from each of the wires of the old power supply cable. Use a multimeter to check continuity in the wires - the wire with the white stripe should be connected to pins 1,4,6 of the old power plug and the other wire to pins 2,3,5,7.

### 7-pin Pinout (pin side):

2	
5	4
3	1
7	6

Solder the red wire to the wire with the stripe (pins 1,4,6) and the blue wire to the other wire (pins 2,3,5,7). Be sure to cover the wires with shrink tubing.

### Additional Notes:

You may have noticed that this power supply (for the Coleco Adam!) is rated at 0.9 Amps, while the Atari power supply is rated at 1.5 Amps! The power supply works on my 800 XL, with my 576k mod, and runs a P:R: to boot! The reason is that the +5 volt line is the only one used - the +12 volt and -5 volt lines are not used. This allows more power to go to the +5 volt line. Also, the 800XL only draws about 1 Amp, including the RAM upgrade and the P:R: I have connected to the system.

While I would not specifically recommend using this power supply on a BBS, I have used it on my 800XL and P:R: running continuously for several weeks with no problems! It is more than adequate for normal use, and for around \$7.00 for the parts - compared to about \$20 for a new Atari power supply - you can't beat the price!

If you have any questions about this or any technical questions about Atari 8-bit computers, you can call the AtariTech BBS at

(813) 539-8141

or write to:

AtariTech BBS,

P.O. Box 7974,

Clearwater, Florida, 34618.

We have many files on easy-to-build hardware projects, memory upgrades, fixes and mods.

Traveler





## I.B. Drive for the ST

by Paul Machiaverna - JACG  
(from The JACG Newsletter)

Tired of spending lots of money for expensive 3 1/2" disks? Wouldn't you rather have the option of using the lower costing 5 1/4" disks? How would you like to be able to read and write an IBM format disk? What if you have PC Ditto and would like to use the 5 1/4" IBM disks? If you want to have the capabilities listed above then I.B. Computers has a great product for you; the I.B. Drive.

The I.B. Drive is a 5 1/4", double sided drive for the Atari ST computers. It is installed as your 'B' drive, as accessed from TOS. Currently, only a 40 track version is available which will yield an approximate capacity of 360 Kilobytes of data. An 80 track version is advertised but is not available due to problems which were encountered from using an 80 5 1/4" drive with the ST. Hopefully, this can be resolved in the future and will give you twice the storage space (720k). Incidentally, a 40 track, double sided 5 1/4" drive is what is used on the IBM XT computers. What is not made well known by Atari is that TOS can read practically any IBM format disk. That means that you can simply place an IBM format 5 1/4" or 3 1/2" disk into your drive and read it without any problems. Of course, your ST cannot run IBM programs without an IBM emulator such as PC Ditto. However, an IBM cannot read an Atari ST formatted disk. So, if you want to place some

files on a disk for someone with an IBM, format the disks on the IBM first. Then use your ST to write the files on the disk.

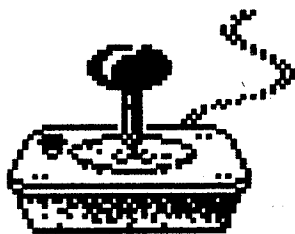
The I.B. Drive is complete and ready to use drive. There is nothing for you to do except plug in the drive to your computer (or 'A' drive) and connect the power. The power supply for the drive is housed inside a sturdy metal case. The drive mechanism is the tried and true Teac half height 5 1/4" drive and should give years and years of trouble free service. Also included with the drive is documentation for installing the drive and instructions for placing a special file in an AUTO folder of your boot disk. This special file is a program which tells TOS to use a slower head stepping rate for the 'B' drive during boot up. The reason for this is that the 3 1/2" drive used as the standard drive on the ST is a faster reading and writing drive than the 5 1/4" drive (The stepping of the head can be felt if you place your hand on the drive case during a disk format or access). The original program used to slow down the stepping rate did not work on the Mega ST computers. A revised program is now available which will work properly on both the two and four TOS ROM versions of the Megs. A word of caution to anyone using a 5 1/4" drive on the ST; NEVER, NEVER use the Format Disk option from the GEM desktop drop down menu for formatting a 5 1/4" disk! The disk format routine of TOS is written only for 3 1/2" disks. Failing to heed this advice will result in knocking the 5 1/4" drive head out of alignment

and possibly causing permanent damage to the mechanism. I.B. computers provides a format utility program with the I.B. Drive for use with all 5 1/4 and 3 1/2" drives.

I.B. Computers has provided the ST user with a rock solid 5 1/4" drive. For users of PC Ditto this drive is a must for easy swapping of disks with IBM PC users. I have used the I.B. Drive for four months without any problems. That is a lot more than can be said for many who have tried to build their own 5 1/4" drive for the ST from a kit with disastrous results. I use the lower costing 5/14" disks for all my public domain files and for hard disk backup. At \$219, the I.B. Drive is the fist complete and reliable 5 1/4" drive for the ST. I recommend it highly.

IB Computers  
1519 SW Marlow Ave.  
Portland, OR 97210  
(503) 297-8425

### The Anatomy of the ERGOSTICK Joystick by WICO



### A Hardware Review by Dave St. Martin

Most recreational computer enthusiasts have very definite impressions of what a joystick should be. For example, I absolutely love a joystick that has a relatively short "throw". The short movement creates an extremely responsive joystick. This adds up to a big plus when the competition is half my age with razor sharp reflexes honed by hours of practice. The benefits of a carefully selected joystick became clear to me during a recent MIDI-MAZE competition. Not known as a game fanatic, no one could figure out how I was beating every one to the punch. Many a competitor would casually watch over my shoulder hoping to learn "the technique". The untold secret was actually the edge given by the joystick.

The particular joystick I was using was one selected after years of picking up every joystick I ran across for a "cheap feel". So rather than call this a review, it might be more appropriate to call this report "The Quest for the Perfect Joystick".

The folks at WICO were kind enough to extend an offer to test their latest creation - the ERGOSTICK. As long-time fan of WICO joysticks I took them up on it. In less than a week the package arrived and I tore into it.

### - 'Outta the Box -

The ERGOSTICK appears to be very much like the EPYX 500XJ joystick which I've used for some time. This new breed of joystick is form fitting to the left hand. A silicone-rubber compound covers the entire base. The trigger button is strategically positioned under the tip of the

left index finger and there's a comfortable groove for the left thumb. The cord, at six feet in length, is slightly longer than those found on other joysticks. The stick itself is shaped somewhat like a bowling pin, with the topmost portion be formed into a knob. A peek below the moulded handle reveals what appears to be a hardened steel shaft of a reasonable diameter. The whole unit appears quite sturdy.

### - A Closer Look -

Many of the features of this joystick become evident the first time it's placed in the hand. The compound covering the joystick is slightly soft and has a sticky feel to it. The covering results in a very positive and solid feel. Both the stick and the trigger button feature tactile feedback in the form of a click as they are moved. The clicks confirm microswitches have been used rather than simple electrical contacts. Microswitches are desirable because they wear better than simple contacts and extend the life of the joystick. Microswitches are the clear mark of a quality joystick. Movement of the stick produced some notable findings regarding the distances required to get a response. When the stick is moved to the north, east, south, and west the distance, or "throw" is relatively short. This was surprising to me because of the length of the stick itself. Generally, the longer the stick the longer the throw.

When the stick is moved to the "quartering" positions (north-east, southeast, etc...) it requires roughly twice the travel distance. This is due to the fact that two micro switches rather than one must be depressed to move in a quartering direction. This becomes a factor when playing games that allow diagonal movement. My feeling is that the throw on a joystick should remain constant throughout all positions. This is a tough requirement, but one that would enhance the ERGOSTICK's performance. The tactile feedback in this joystick is another function of the microswitches. Initially it appears that the pressure required to activate the switches is too high. This is particularly true if you were to walk into a store and "check it out". I did not find this to be a problem during the heat of battle however. With the adrenalin flowing and heart pounding, it's easy to "over amp" and the slightly high threshold pressure assures that activation only occurs when you want it. Still, the trigger button specifically might benefit from a decrease in threshold pressure or reduced travel distance.

Perhaps the biggest plus for the ERGOSTICK can only be discovered after extended play. I experienced a reduction in hand fatigue following prolonged use. This can be attributed to a couple factors. First, the covering compound feels more secure in your hand than that of more traditional joysticks. I found that I wasn't clutching the thing in death grip for fear of slippage any longer. Secondly, the size of the joystick base is a plus. At first it felt too large for me, and I should note that I have larger than average hands. During long periods of use the size became an advantage in that it again

worked to prevent hand fatigue. I would say hand fatigue ranks pretty high as a reason most players pack it in when playing. Clearly, you can play longer with this joystick.

### - Knocking It -

There are some questions raised by the surface material on the base. Will it deteriorate with time? I'd say probably not as the material appears to be the same as that's used in mouse balls <<grin>>. I've washed the ball from my mouse several times now with plain bar soap and water and it's as good as new each time. Hands dripping with potato chip or popcorn oils could only serve to deteriorate the surface though and I would avoid it. I prefer a slightly shorter stick or "bat". This is primarily due to me desire for a "fast" response in a joystick. The shape of stick on the ERGOSTICK allows me to take a comfortable pencil style grab below the top knob. The knob prevents the loss of the grip. While this is alright, I would prefer an interchangeable stick as WICO once offered on their Red Ball and Bat Handle joystick. Don't misunderstand, while the present one is okay, it could be improved. Also, the size of the base might be just too much for people with small hands. If you have small paws check it out before you buy. Also, you lefties are out of luck unless WICO comes out with a left-handed model.

### - The Polls are In! -

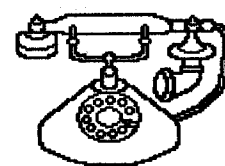
So... should you buy it? I tested the ERGOSTICK on a wide variety of game software and I would place this stick in the top three that I've owned (a box full!). Overall it was responsive and comfortable. On a scale of 1 - 10 I'd give it an 8.5 - a very good ranking in my book. The throw distances when quartering and the stick characteristics are the primary reasons for this ranking. I guess you must remember too, that most of us will never be 100% happy with any joystick. That's why most gamers will always continue to Quest for the perfect joystick.

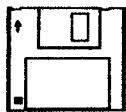
(C)1988 David St. Martin.  
Permission to reproduce this material is hereby/granted to non-profit publications provided the credits and article remain intact. All others should contact the author.

NOVEMBER 10th  
Eastside ST Sig

Publishing Partner  
demo

Call Teri for info  
afternoon or evening  
771-7337





# BUMPAS REVIEWS

# A.C.E.

## SCANART

MiGraph (720 S. 333d St., suite 201, Federal Way, WA 98003) has put together 2 disks containing over 100 quality high resolution bit-images. These are all professionally-drawn line art which has been electronically scanned and then edited to maintain the original quality.

A really interesting feature is all the files are standard .IMG files which can be used by any application on any computer which uses high resolution .IMG files. And since the ST can write to IBM format disks, these can be easily used by both types of systems. I know my Easy Draw output will be improved by this art. It's very interesting to see a package which says it contains a 3.5" disk version for IBM PC/XT/AT/PS2 and Atari 520/1040/Mega ST!

## EASY TOOLS

MiGraph also has a great new program (on sale now for \$45!) called EASY TOOLS. It installs as a desk accessory on the EASY DRAW desktop.

Easy Tools can measure the length and angles of figures instead of the guesswork required before. A figure's coordinates and dimensions may be entered in numerical form rather than using the mouse to skrink, stretch and position the figure. Any Easy Draw object (except text and bit-images) may be rotated in increments as small as 1/100 of a degree. To rotate text, another function permits entry of up to 45 characters. These lines of text can be rotated, sized, stretched, shrunk and repositioned at will.

One of the biggest and most valuable tools is the "polylines" function. Any object may be converted to add, delete or move any individual points on the object or group of objects. The freedom and flexibility this one tool adds is worth the price alone. New objects can be created with an ease not available before. A "circular copy" function is available from within the rotator tool. This function rotates figures about a defined point, and leaves copies of the object spread along the path defined. Five parameters may be set for this function, including number, angle, end size (% of the original object), start distance, and end distance. The use of this function may well rival the polylines function in usefulness. In time saved, it will be even more valuable.

If you use Easy Draw, you can put two more oars in the water with Easy Tools. I definitely recommend its use.

## GLOBAL COMMANDER

Datasoft has released GLOBAL COMMANDER, which is being distributed by Electronic Arts. Those of you who eagerly looked at Balance of Power and were disappointed might find this one

more interesting.

This game has a similar premise. The player is in command of powerful strategic weapons military, diplomatic, and economic. Messages and news items are shown on the screen to guide your play. But where Balance of Power lacked dynamism, this game is full of it. Messages can't just be read, in all instances. Some are "over heard" transmissions which must be deciphered before they can be read. The player has a powerful tool in the computer which can make gibberish readable if the correct combination of "cracking" algorithms are used. Requests from the Global Commander to countries to share food and technology are never ignored. Requests are not always complied with, however. Part of the game is to build up enough prestige to make requests "law". Troops can be moved around to protect some countries and discourage aggressive ones.

SDI-type satellites can be used as a last resort to try to block missile attacks. These satellites may be moved about in geostationary orbit over troubled areas which might be tempted to begin an attack.

Most game operations are conducted from a mouse activated console which shows a map and will produce displays and graphs for most functions. It's a one-player game with a lot of challenge. The graphics dynamism of the game makes it a lot of fun to play.

## WARSHIP

SSI has brought my favorite 8-bit game to the ST world. Warship is a game of tactical Pacific War (1941-1945) naval combat. The biggest problem with the 8-bit game is all the disk access which slows play too much. On the ST it all fits into memory, so a game play in about half the time.

Moving around the map is much easier with the mouse. And several game functions are much better done with the mouse interface than on the 8-bit version. Some of the 8-bit functions have not been well-adapted to the mouse, though. For instance, a lot of game action is taken up with adjustments to speed, compass direction and torpedo targeting. While these actions are done with the mouse, the way in which they are done is little better than was done without the mouse.

Speed and compass direction have to be done by holding down a mouse button to increment (by 1, 2, or 10) speeds and compass direction. This is time consuming, especially with 20 ships. Instead of a dialog box with a number counter, I think a compass rosette requiring only a click on the compass direction desired is better. Speed could also be done with a display object looking something like the speed signallers used in ships (those "half speed", "full speed" levers with bells, etc.).

The color and graphics are a nice improvement over the 8-bit version, but the real gain in playability is the dramatically improved speed. I can play a complete 4-hour (game time) battleline scenario with 2 players in a couple of hours. It might take more than one session of twice that many hours on the 8-bit version. This alone makes it imperative for anyone who enjoys the game on the 8-bit to get the game to run on their ST. It's \$60 retail, and you'll get your money out of this one in many enjoyable ship-to-ship combats involving US, Japan, Common wealth and Dutch (East Indies) combat ships. You can also modify the ship characteristics to be able to produce almost any 20th century naval ship.

## HEROES OF THE LANCE

SSI brings a popular board game to the ST with Heroes of the Lance. This \$40 game is based upon the first AD&D Dragon lance game module, Dragons of Despair. The joystick is used to move and fight a party of eight adventurers into the depths of the ruins of the temple ask Tsaroth to retrieve the precious platinum Disks of Mishakal.

All other game functions open up by a quick press of the space bar. This also has the value of creating some "breathing space", as the action is paused until the system of menus is exited. Fights with various monsters and things to do on the animated screen require the party to be rearranged quite often. Magical opponents are best fought with magical weapons. Certain objects may only be picked up and used by certain characters. The menus are also operated by the joystick and button, making for a good, intuitive interface with the player. There's no clumsiness here at all.

These disks (three of them) are not protected, so they can be copied to a hard disk. I copied them onto 2 double-sided disks to minimize disk swapping. I save my game on the second disk. I advise saving the game often. If all 8 characters are killed, the initial protection of the program requires you to look up an answer in the documentation before play may resume. You can avoid this if you restore an old game before all 8 are dead. I tried fighting 3 or 4 monsters at once on a page. Several of my characters died, and I was furiously trying to fight with the rest. The program then crashed with 3 bombs. I think the screen just got overloaded with activity. You won't want to play the game this way if you're interested in success. If there are too many monsters on the screen, you can often dodge them by ducking into a nearby doorway or corridor. When you come back, the monsters may no longer be there. I advise running away whenever you're not sure of success.

The action and adventure

provided by Heroes of the Lance will keep you interested for hours of fun. The graphics are very high quality, and the animations are as good as any I've seen in any game. This is sure to be a big success for SSI, which means we'll see more games in this series in the future.

## THE EQUALIZER

Charles Schwab, the discount investment broker has an on-line database for their clients. All sorts of research and brokerage services are available from this database. They sell a software package for IBM compatibles called The Equalizer which they require to use this database. For \$99, you can become your own stockbroker by doing all your own research, displaying quotes on various investment products, and placing your own orders to buy and sell.

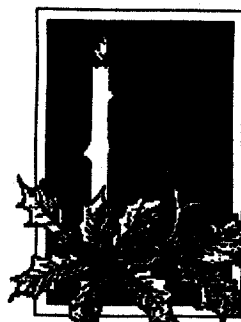
The Equalizer just recently became available on 3.5" disks. So I got the package and tried it out on my ST with PC-Ditto. No problems. I was able to use any function in the program. There are no graphics, so the speed degradation was barely noticeable.

The program is slow on a floppy-based system because of all the disk I/O. The program is written to accommodate small-memory IBM compatibles. Only a small part of the program ever loads into memory at one time. I recommend a hard disk for serious use.

--Jim Bumpas



**Xmas Party  
Members and  
Family Only  
Food, Drinks,  
and fun!  
December 5th  
7.00 PM**





**\*\* PRESS RELEASE \*\***

Date: September 09, 1988

From: DataQue Software  
P.O. Box 134  
Ontario, OH 44862To: All Atari 8-bit Developers,  
Users and Supportive OrganizationsRe: Turbo Power without getting  
Burned!

There have been many mentions in the almost decade since the original Atari 400/800 Personal Computers hit the dealers shelves about there being a future upgrade to meet the user's needs, and new and more challenging applications. Finally that upgrade is available.....

The Turbo-816 by DataQue, for the Atari 400/800/XL/XE.

DataQue Software is pleased to announce a powerful new upgrade which was co-designed by Ron Shue, and Chuck Steinman. This upgrade will be available in two forms. There will be a replacement CPU board for the original 400/800 Computer system, and a plug in module for the XL/XE series. In either case, there usually is no need for any modifications to the existing hardware. The only exception to this is with XL/XE systems which have their CPU soldered in place, which will require the removal of the existing CPU, and the addition of a standard 40 pin I.C. socket is suggested. Also included is the Turbo- OS,

by DataQue for use with the Turbo-816 CPU boards.

The Turbo-816 will not only increase the potential speed of the computer, but also break the 64k memory barrier of the existing systems. Not with the awkward paged memory, but with a fully linear decoded address space of up to 16 megabytes. Benchmarks have put the Turbo-816 into a performance range ABOVE many of the "other" PCs!! Special memory boards will be available to take advantage of the new extended addressing range. These will be mounted internal to the computer cabinet, and in most cases require no hardware modifications.

And here is the amazing feature..... While adding all this power and all this expanded addressing, the Turbo-816 for the Atari 8-bit computer systems will maintain compatibility with most currently available commercial and user written software. Using the Turbo-816 even those older programs will enjoy a speed increase!

The Turbo-OS is a replacement operating system for use with the Turbo-816 which will release the 16-bit processor to its full power. Increased speed will be the most obvious change, but hidden in its code, will be an advanced new floating point library that will speed even the original Atari BASIC to new levels of performance. Again, on most systems it will be just a matter of replacing the existing ROM(s) with the Turbo-OS.

The future holds many more products for the Turbo-816 systems including:

- 1) a real-time multi-tasking operating system kernel
  - 2) a new assembler-editor- debugger package which supports the new assembly level instructions and addressing modes
  - 3) a new BASIC which will speed past the fastest of the current BASICs for the 8-bit machines
  - 4) a new K&R compatible C development package
  - 5) a new Turbo-GOS operating system (graphical based)
  - 6) a developers development kit for new applications
- The NEW Atari Turbo-816 should be available by November of 1988

For more information contact your local Atari Dealer or, write:

DataQue Software  
Dept. T-816  
P.O. Box 134  
Ontario, OH 44862

\*\*\*\*\*  
\*\*\*\*\*

### Gato Submarine Simulator

Dave Moore (PAC)

After a VERY long awaited time, GATO has been released on the Atari. It is on a cartridge and works on all Atari Home Computers with 48K of memory. Disk drive is optional equipment. After buying Gato, I could hardly wait to get home and get started being my own captain of a GATO-class submarine. I read all

of the simple to use instruction manual, all 16 pages long. Upon booting I was confronted with several questions. After them I entered the currency date, and onto the game parameters.

Now having this all aside I was off to get my mission orders. I heard them load and clear in morse code. Good thing I have the manual to translate them. Best of all the Radio man did it for me. Upon receipt of my orders, I popped out my chart and proceeded off to my close encounter. After many sunken "Jap ships" I noticed that I had been playing this game for the last 3 1/2 hours. Not bad for a person who doesn't play to many games. I own both Silent Service and Gato. It is very hard to compare these two good simulations, both having many good features. I do beleive that Gato is the one that I would choose. The graphics are about the same a Silent Service. The ease of running the ship is what I like best. The controls are easy to remember, something that will come in handy when a Patrol Boat or Destroyer is chasing you. At the price of \$24.95 this is one piece of software to add to your ever growing collection. Good luck Captain !

Sign up for  
Board Positions  
Elections  
at the  
November 7th  
Meeting



"PAGE 6"? - WHAT KIND  
OF ADDRESS IS THAT!?



# DISK CATALOGERS

## Doug Atkinson

NOTE: The following review is my opinion. Feel free to copy it, share it, reprint it, use it, ignore it, or throw it away as you please. I went through quite a few disk catalog programs to find one that would do what I wanted (or close to it) and I thought I would relate my experiences. Hopefully, someone will find some use out of it! Also, although I haven't followed it closely at all, I believe someone on the MICHTRON bulletin board on GENie is or has taken a survey on the perfect disk catalog program. You may want to look into this also if you are interested in this area.

### Disk Directory Catalogers/Librarians

#### Introduction:

A disk directory catalog program will help you keep track of the many disks you accumulate. The easiest program to use would be a directory printing program. Using the program, you would just insert each disk and print a directory listing to a printer. While easy, however, it is not very flexible. Deleting files, adding files, adding comments, and obtaining a "pretty" printout are all out of reach.

Following is a review of nine public domain (or shareware) disk directory catalog programs which are available on many bulletin boards. I have yet to find the "perfect" cataloger, but some are very good! The programs included in this review are: FDI, HDSCAN, DISKSCAN, DISKTOP2, DISKCAT, DISKLIB, THE MENU, DISCAT20, and THE DIRECTOR.

A generic database program could also be used for this purpose, but when the disk collection grows to 30 disks or more with 10 or more programs per disk, a major effort is required to add all the programs to the database. The advantage of a database, of course, is that you can specialize it. You can have all the fields you need, you can print different reports with only the information you want, and you can sort on any field. Where the specialized disk catalog program has an advantage, however, is in the speed of entry. Instead of separately typing in every program on a disk, you simply place the disk in the drive and push a button. The program reads the directory and adds it to the library. From here, some catalog programs allow you to edit the library, adding comments, deleting entries, or adding entries.

This method is relatively fast and is very convenient. In fact, I have found that I am using both methods, both a disk cataloger and a database program. I have the cataloger to show me the exact content of each of my backup disks so I can easily find a program should it need "replacing", and I use the data base program to organize my "working" programs by categories of games, utilities, graphics, etc.

A word of warning is to be cautious of so called "virus" or "worm" programs, which act like a normal program but do devious actions at the same time, such as erasing a hard drive or something similar. Since every disk you own will probably be read with a catalog program, your disks are vulnerable to this type of maliciousness. I would advise write protecting all disks used and avoiding those programs which must write to a disk to catalog it.

A few of the reviewed programs do write a disk name to every disk. This is an advantage in that when a disk is reread later, the program already knows the disk title, and the title can often be more descriptive than the normal eight letter volume name. The two disadvantages are the potential of a virus program, and when you want to catalog a protected disk. These, of course, cannot be written to because you may change a "checksum" which the program verifies in order to run.

#### Common Features:

First is drive support. A good disk catalog program should be able to access any drive, A through P. This allows you to catalog any drive, including a hard drive or even a ram disk if needed. A couple of the programs are for drive A only. If you are a 520 owner with a double sided external drive, you would still be limited to cataloging single sided disks.

The second feature is the use of volume names. Some of the programs use the disk volume name, some let you create an optional name, and as mentioned above, some even write this optional name to the disk.

The third feature is the information read from the disk. The information available includes: disk name, folders, file name, file size, file date, file time, file read and write attributes, and the file path name. A program may read only some or all of the available information, and some give you a choice on what you want included in your catalog.

The next feature is how the program allows you to manipulate the data once it is read. Some features are: Add files, delete files, sort files, delete disks, add comments, search for programs, and find duplicates.

The next area is output support. Output can be to the screen, the printer, or to disk. Functions to be covered are printer support, specifying which information should appear in report, and output in different formats for storage or use in other programs such as word processors or data bases.

The final area I cover is extras such as GEM support, ability to update a catalog, rename files, etc.

### THE REVIEWS:

**DISKTOP2:** The version I reviewed was Ver 2.0, and is the most limited program of the bunch, but not necessarily the worst. DISKTOP2 was written by Todd Burkey of MindTools and is very nicely done. The screen color is a very pleasing blue and you may use keyboard or mouse input. Help is available online by simply pressing the HELP key. The screen looks like this:

Disk Name	File Name	REV 2.0 DISKTOP By TODD BURKEY MIND TOOLS	Disk Name	File Name
		#Files 0000 #Disks 0000		
Option: (press help) ADD A ADD B KILLIT FIND SCAN PRINT QUIT UP DOWN YES NO				

There are eleven commands available. Add A and Add B allows you to read a disk from drive A or B. When read, the program asks you for a disk name (which may be a number or description or whatever you want) and then displays the directory in the two column format on the screen. KILLIT allows you to delete a filename from the list. This is valuable if you don't want .RSC files showing up or something. The next command available is FIND, which searches for a filename. An exact match must be made, with no wildcards. The next command is SCAN, which runs through all the filenames read in. PRINT does not send the info to the printer, but instead prints to a file for use with a word processor or data base. QUIT of course quits the program, with a prompt to save the listings or not. UP scrolls up a page, while DOWN scrolls down for searching through your disk listings. Finally, YES and NO commands are available to answer questions such as whether to save the listings or not. As I mentioned, the program is very nicely done and is easy to use, especially with on-line help. DISKTOP2 makes it possible to load disk directories into your favorite word processor easily. If all you need in your catalog is the file name and disk name, this program will do the job.

**DISKCAT:** DISKCAT is shareware by S. Nies and was written as a companion to the hardrive utility TURTLE. The nice thing about DISKCAT is it is GEM based, making it intuitive to use. There are three menus at the top of DISKCAT with the drop down menus shown. Just below that is a sample of the screen printout:

DESK		CATALOGUE		ENTRY	
ACC1 ACC2		READ NEW DISK SAVE LISTING PRINT LISTING QUIT		FIND DUPLICATE DELETE ENTRY	
DISK	DATE	TIME	FILENAME		
1	11/20/85	12:06 AM	A:\ARC.TTP		
Desc: This is an excellent Archiver program with several functions.					
1	3/18/88	4:41 PM	A:\VOLUME.PR		
Desc: Version two of a program to change the volume name on disks.					

DESK has the description of the program as well as any accessories you may have loaded. The selections under CATALOGUE are fairly self explanatory. Note that DISKCAT uses only disk drive A. The ENTRY menu has two commands, Find Duplicate and Delete Entry. Find Duplicate searches for identical filenames in the listings to let you know of repeated entries. Delete Entry seems to delete the file from the disk, so use caution!

Below the menu is the display screen. This has one heading line, and the rest is room for the listings. The heading shows DISK (name), DATE, TIME, and FILENAME. A directory filename is displayed on two lines, the first lining up with the above headings and the second line for a description of the file (one full line) as shown above.

The disk number is entered when Read New Disk is selected. The "Desc:" field is edited by clicking the mouse over an entry, and entries are scrolled by using the standard GEM window. The FILENAME entry shows the complete path, which is nice. when a listing is printed, the Header is not printed. This program is easy to use, and I found no bugs. I was not crazy about the printout, though it does allow for long descriptions and is largely a matter of taste. The biggest flaw I found in the program is support for only drive A.

**DISKLIB:** I reviewed Ver 0.91. This is a copyrighted program written by Tom Ekdom but available for free. It is not GEM based. A nice help file accompanies the program, in which the author asks for suggestions for improvement and hints at possible GEM application. As is, I found the interface fairly unfriendly, but usable. The command screen appears like this:



DISK LIBRARIAN V0.91 (C) 1987 Tom Ekdom. Free distribution ok.  
LIBRARIES: No Libraries Found  
ENTER NAME OF LIBRARY TO CREATE:  
" " NOT FOUND. CREATE IT? (Y/N): Y

Files/Disks/Catalog/Remove/reName/Load/Print/Quit (F,D,C,R,N,L,P,Q)?

The commands are each available by typing one character. "Files" is a "find" command which accepts wildcards only at the end of the specification. It will find all matches to the entered filename. "Disks" lists the contents of a disk. Enter the name of a disk in the library and the files will be displayed. "Catalog" is the main command, and reads the disk directory. Any drive may be specified, and you are prompted to enter an eight character or less disk name. A disk already in the library will be updated. "Remove" erases a disk from the library. You also have the option of removing the disk name from the original disk. "Rename" allows you to change a disk name in the library. Place the disk to rename in a drive and press the appropriate key. "Load" creates a new library, allowing you to have one for games, one for utilities, etc. Be sure to save the old library before loading the new one. "Print" toggles the printer on and off. Thus, to print the contents of a disk, press P which toggles printer on, then press D for Disks and enter the diskname you wish to print. It will then be printed. Hit P again to stop printing. "Quit" exits the program with prompts to save your data.

DISKLIB displays six file parameters. They are Filename, Size, Date, Time, Diskname, and Path (if any). This heading is printed along with the listing when Print is selected. There is no provision for comments to be added.

For fast operation, DISKLIB has an accompanying program called FILEFIND to accomplish file finding. It loads in only the filenames and is thus much faster than using DISKLIB itself.

DISKLIB works quickly. It has the added advantage of being able to use any drive. Unfortunately, DISKLIB writes to every disk it reads, and this feature is not defeatable. This write is to a "hidden" file and is the diskname you enter with a .ID extention added. The only way to remove the name is to format the disk, use a sector editor, or use the Remove function. DISKLIB is not usable for protected disks, or for "full" disks that have no room for any more writing.

FDI: The next program is a full featured non-GEM disk catalog program called FDI, or Floppy Disk Indexer. An extensive help file comes with the program that explains all the features. FDI is apparently public domain and is presented by Rod Waehner.

The display screen for FDI is extensive and is reproduced below:

Sunday, 04/10/88 02:27  
FDI-A Floppy Disk Indexing Program

DISK: FILE:  
DESCRIPTION:

FOLDER:  
DATE: TIME: SIZE:  
SOURCE: TYPE: DATE ADDED:  
COMMENTS:

FILESYSTEM IN USE: CONTAINS \_\_ ENTRIES

ACTION: Add a new entry Next Entry  
Beginning of file Output to Printer  
Delete this record Previous entry  
End of file Quit the program  
Find an entry Switch prime index  
Index a disk Update this entry  
List to screen View disk directory

ENTER NAME OF FILESYSTEM TO BE USED:

To begin, you enter the name of the library to be retrieved or created. The filesystem consists of three files: a data file and two index files which should always be kept together. After a filesystem is created, read your first disk with the "Index" option. FDI uses only disk drive A so place your disk in this drive. A new screen appears which asks for a disk ID, up to four characters. This ID is written to the disk, but at least with FDI, this option is defeatable by writing "N" in the field "Write ID to disk". Press F10 to continue to the main screen. The "Add" function allows you to manually add a filename /disk to add hidden or nonstandard files. "Begining of file" takes you to the starting file, while "End of file" displays the last file in the library. "Delete this file" deletes the current record. "Find an entry" allows you to search for a filename or diskname. The name need not be complete, for example entering "m" will find all files beginning with "m". "Index a disk" was explained above. "List to screen" displays a new screen showing Disk ID, Filename, Description, Date modified, Time, and the Size of the file. Options available are Next Page, Previous Page, Up arrow, Down arrow, and F10 to select. Pressing F10 will display the selected file back on the main screen. "Next Entry" displays the next file in sequence, while "Previous entry" displays the preceding file. "Output to Printer" prints the information as shown in "List to screen" with the heading lines included. Report is sorted by file name or disk ID, depending on current index. "Quit the program" returns you to desktop. "Switch prime index" changes index from default filename to disk ID or visa-versa. "Update this entry" allows you to edit file entries

on the upper half of the screen. Used mainly to enter file descriptions. "View disk directory" prompts you to enter a disk and displays file-names, date last modified, time, and size. As you can see by the description, this program is very extensive and would be highly recommended except for two problems. The first is that, as mentioned above, FDI uses only drive A. Of course, if you only have drive A or if your drive A is double-sided, this may not be a problem. The other problem is it is highly disk intensive, making it very slow. On every editing action of the program, it writes to disk immediately. Thus, for every comment to be added, the program does a write. To list the files to screen, FDI must reread the disk. If FDI had been memory resident instead, I could more highly recommend it.

THE MENU: This is one of the best programs of the group. It was written by M. F. Hollenbeck for Future SoftWare Systems and is copyrighted but is in the public domain. The version I tested is 1.0. The Menu is totally GEM based, has online help, and is versatile. The somewhat edited screen looks as follows (it also has the familiar scroll bars on side and bottom):

DESK	FILE	SEARCH/SORT	PRINT	STYLE	HELP
ACC1	OPEN	NAME	ALL	DEFAULT CLR	HELP
ACC2	SAVE	TYPE	BUFFER	INVERSE CLR	
	ADD	DATE	ERASE	STATUS LINE	
	DELETE	DISK #		LAYOUT LINE	
	ADD COMNT	FOLDER			
	EDIT COMNT	COMMENTS			
	QUIT	BLOCK SEARCH			
		FIND PATH			
		SORT			
TOTAL FILES>		CURRENT LINE>		LAST DISK>	

"Desk" contains any accessories you have loaded as well as the credits notice for the program.

"File" has seven commands. Open File and Save File allow you to retrieve or replace a disk library from disk. Add Files is the main command used to read a disk directory. Delete File allows you to remove a file from the listing. Add comments, when selected, will automatically prompt you to insert comments when a disk directory is read. Edit comments will allow you to change or add comments to directory listings already read in. Finally, Quit Program returns you to the desktop.

"Search\Sort" has nine selections under it. Six of these allow you to search or sort by name, type, date, disk number, folder, or comments. Thus, by using comments such as Game, Utility, and Graphics, you could sort your programs by catagory regardless of the disk they came from. The next command available is Block Search, which will find all occurrences of a type and place it in the buffer. Find Path finds a file and shows the disk number and the complete pathname. Finally, Sort will sort the library according to the field type selected above.

"Print" allows you to print all (everything), print the buffer (loaded through successive Block Searches), or erase the buffer.

"Style" affects the display screen. You can have the default colors whatever the program was loaded up with) or the inverse colors. The heading line can show either the screen layout or system status of how many files, current line selected, last disk number, and free space available. Finally, the "Help" menu contains descriptions of all the above functions.

The Menu reads in a disk directory, showing disk number, file-name, date of last modification, whether it belongs to a folder or not, and finally some spaces for comments. The listing is scrolled through the scroll bars on the side of the window. Printing can be done to the printer or to a file. The Menu can access all disk drives. The Menu does not write to disks. Overall, I give The Menu very high marks, and I feel it is one of the better public domain programs available.

DISCAT20: This is a shareware program written by Matt Leber. You have to pay for DISCAT20 and it is not GEM based, but it offers the ability to print labels as well as being an excellent disk cataloguer. There are three menu screens as shown below:

Edit Menu:	Main Menu:	Label Menu:
1. Add Dir to Catalog	1. Edit Menu	1. 2.75x2.75 Labels
2. Edit Cat Entries	2. Get Cat From Disk	2. 2.75x1.875 Labels
3. Sort Catalog	3. Get Old Cat From Disk	3. Spaces to Insert Left Margin
4. Clear Catalog	4. Save Cat to Disk	4. Print Test
5. Change Start Disk #	5. Output Catalog	5. Print Labels
6. Delete Disk fr Cat	6. Print Labels	6. Return to Main
7. Return to Main Menu	7. Exit Cataloger	
	8. Credits	

The first screen after the shareware notice is the Main Menu screen with eight selections. Most of these are self explanatory, especially if you've read all of the above! The Old Cat selection is for compaibilty with version 1.3 of this program, since V2.0 saves in a more efficient format.

When you select Output Catalog, you can write to the screen, the printer, or to disk, which saves the output in a readable ASCII format.

When you select Edit Menu, you get a second menu (on the left). Selecting Add directory prompts you for a disk number (automatically incremented, but editable each time) and for a drive letter. DISCAT13 then reads the directory. Selecting Edit entries then takes you to the screen:

Up Arrow	- up line	Down Arrow	- down line
Control up	- up page	Control down	- down page
Control T	- Top	Control B	- Bottom
Function 8	- Search	Function 10	- Return to Menu
Function 1	- Add/Del File from disk label		
<Delete>	- Delete File		

FILENAME	DISK #	Description
ARC.TTP	1	Excellent Archival program.
DISCAT20.PR G etc.	1	Disk Catalog program.

Here you may scroll through the listings, delete files, add or edit comments, and add or delete files from the disk label. This is very useful because you may want all the files listed in the library, but the label probably has no need to show .RSC or .DOC files.

The display of DISCAT20 is very simple, and shows only File Name, Disk number, and leaves the rest of the line for comments.

The final menu is for printing labels and is used in conjunction with the edit screen above, where you select the files to be printed. The print menu allows you to select two different size labels, insert spaces in the left margin to allow easier alignment, print a test label, and of course to print a disk label.

The only things missing are the ability to update disks and some of the file parameters such as file size. However, the ease of use of DISCAT13 outweighs this requirement for me. I can wholeheartedly recommend this program.

**THE DIRECTOR:** One of the recent issues of START magazine included THE DIRECTOR. This is a disk directory reader that is designed to be used with a database. It is very flexible and easy to use. As mentioned in the introductory paragraph, the use of a database for disk directories is probably the most useful format, though not the easiest. THE DIRECTOR makes it much easier! THE DIRECTOR allows you to select extensions to be included or excluded from your listings (such as .RSC files, for example). You may have any combination of the following in your completed directory file: File name, Extension, Disk Name, Alternate Disk Name, File Size, File Date, File Time, and File Path. You may save your output in several formats: ASCII, Delimited for Databases, DIF, SDF or Zoomracks/Cardstak.

If you have a decent database program (or even a word processor), THE DIRECTOR makes an excellent disk directory tool.

Two other programs I have recently been made aware of but have not had time to experiment with are DISKSCAN and HDSCAN. They are by the same maker of DISKTOP (Todd Burkey), and are actually

complete disk directory managers. By this, I mean that not only do they read and store disk directories, but they also allow you to copy, delete, move, rename, search files, and more.

As you may have guessed, HDSCAN is for Hard Drive users. The main difference is in the handling of disk names since for the Hard Drive it is only several large partitions.

Here is a list of commands: Create a directory, Rescan disk, Invoke selected program, Add tagged files to existing ARC file, Run external programs, Verbose ARC, select files, Compare files, delete disk from database, erase tagged files, globally run external program on tagged files, page up/down, go to top/bottom, scroll up/down, mass copy tagged files, move to next disk, sort files, change name and/or attributes of file, select match, tag files, retag copied files, untag file, view a file, view a file in Hex, and more.

As I said, I haven't had much time to use either of these almost identical programs, but they look to be very extensive. You can also set up macros and bind them to the function keys for ease of use. If you need a complete file management program, these may fit the bill.

Well, that about concludes this review. If you are curious, I use DISCAT20 and THE DIRECTOR the most. DISCAT20 is great when you are giving a disk to a friend and you need a quick sorted listing of the contents with comments added to explain the programs.

THE DIRECTOR allows the inclusion of file size and other attributes when needed, but is not quite as fast to use.

I have also kept THE MENU, and still have to try out DISKSCAN and HDSCAN more extensively. The other programs, for one reason or another, were simply not for me.

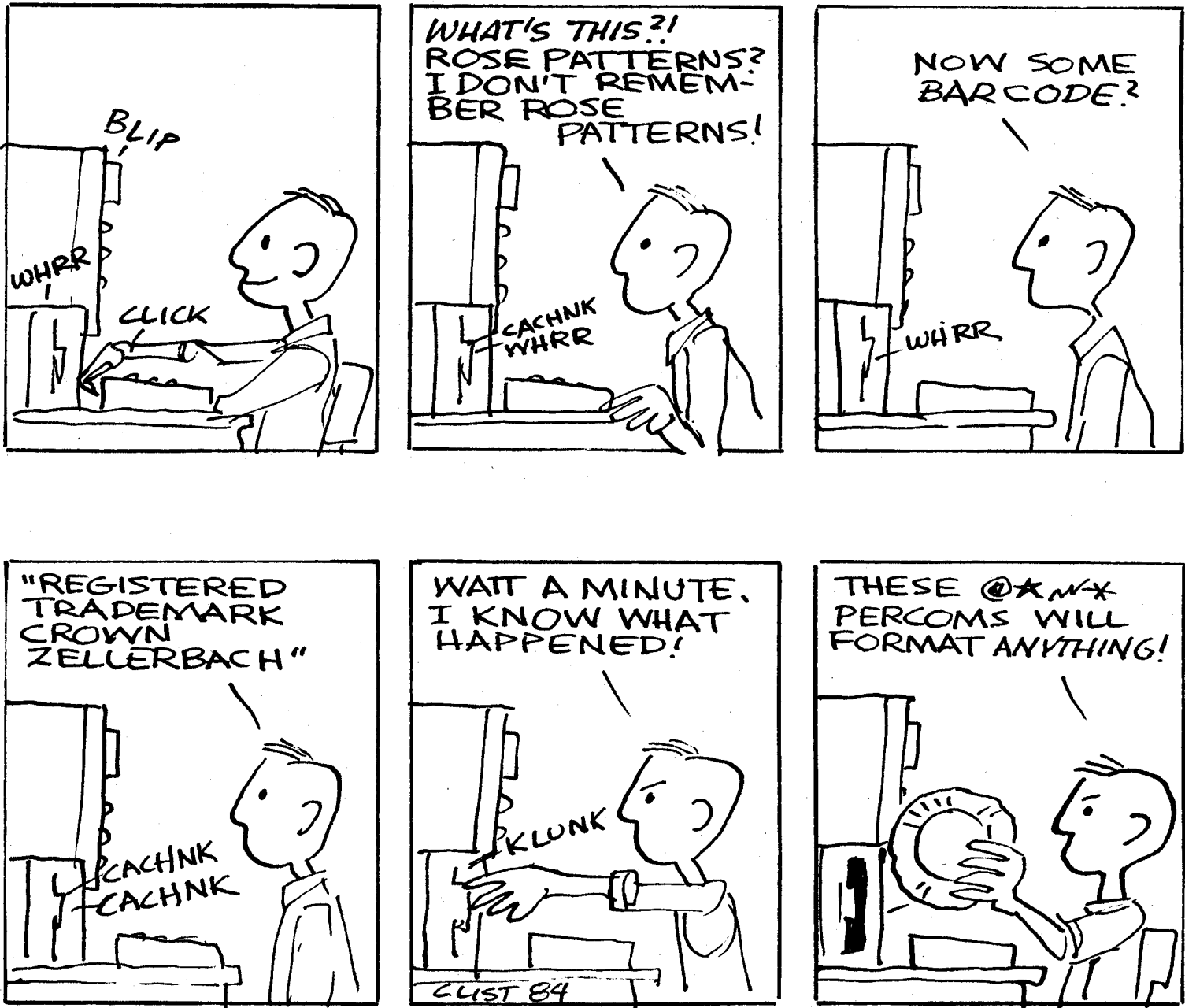
I hope this review is helpful for you in deciding which program to use, or in deciding which features you need. I am sure there are programs I have missed, and possibly features I have missed in the reviewed programs, so please use this review as a guideline.

Oh, finally, where do you get these programs? THE DIRECTOR was in the Special Issue Number 2 of START magazine (on disk). I have found the following on GENIE:

#4109	DISKLIB.ARC	24K	V0.91
#3576	DC20DEMO.ARC	33K	DISCAT20 demo version
#3573	THEMENU.ARC	112K	The Menu. Public Domain
#3420	DISKCAT.ARC	38K	Turtle companion
#3415	HD-SCAN.ARC	43K	HDSCAN shareware
#3235	DISCAT13.ARC	38K	Old version DISCAT13 shareware
#2444	DISKTOP2.ARC	24K	Version 2.0
#348	FDI.TOS	?	Docs in #349


Doug Atkinson  
Genie: D.ATKINSON2

And yet another final: I just noticed file #'s 8111 and 8110 on GENIE, a disk database using DB Man. One is much longer and includes the required run time program for DB Man if you don't have it. I have not downloaded this, so I can't comment on its application.



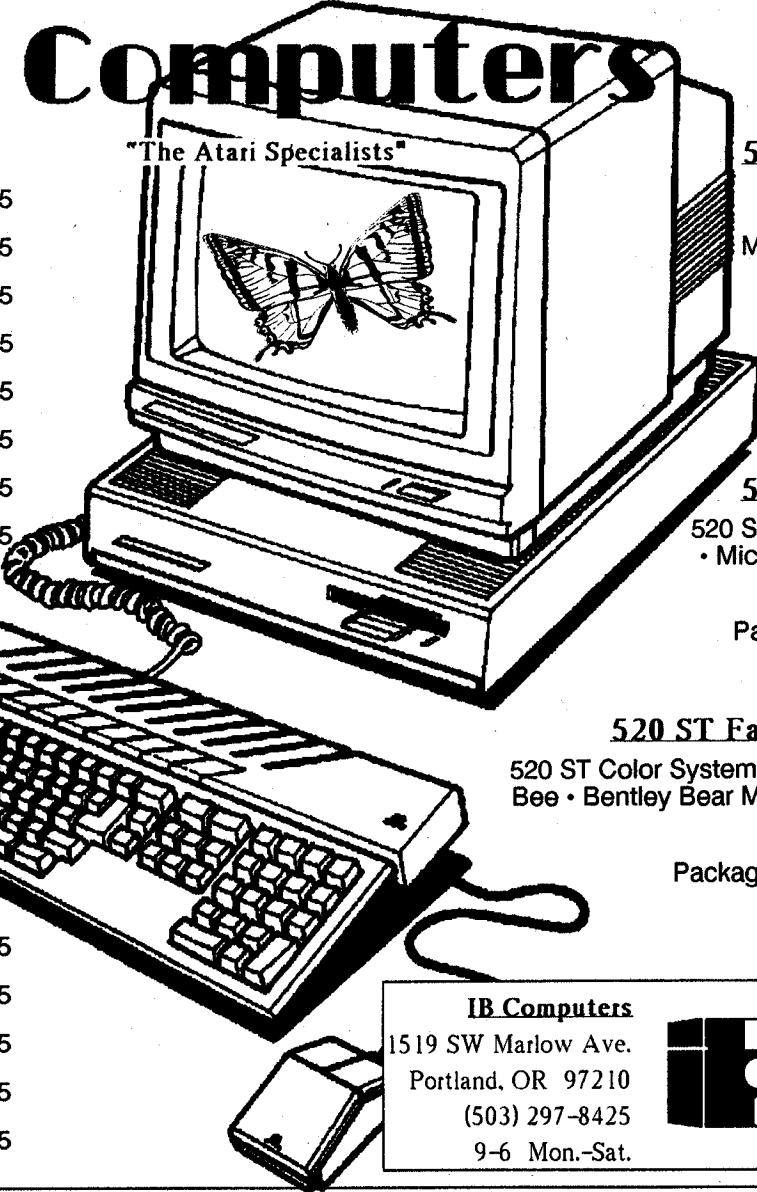


NOVEMBER, 1988

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
6	7 SWAP MEET	8 8-BIT EXPLORERS SIG Call Dave Moore for info 297-7223 7 PM	9	10 ST EASTSIDE SIG Call Teri For Info Afternoon or Eve. 771-7337 7 PM	11	12
13	14	15 PAC BOARD MEETING 7 pm For location, call Bill Pike, 646-4471	16	17 ST WESTSIDE SIG Call Bill Pike for info. 646-4471 7 PM	18	19
20 	21 	22 8-BIT EXPLORERS SIG Call Dave Moore for info 297-7223 7 PM	23	24 	25	26
27	28 NEXT GENERAL MEETING DEC. 5th	29	30 MIDI SIG Call Dave Holliday for info 642-4717	Happy Thanksgiving		

# IB Computers

"The Atari Specialists"



**ST**

Revolver \_\_\_\_\_ \$41.95

Crack'ed \_\_\_\_\_ \$29.95

Road Raider \_\_\_\_\_ \$41.95

Virus \_\_\_\_\_ \$24.95

Space Harrier \_\_\_\_\_ \$41.95

Heroes of the Lance / Advanced D&D \_\_\_\_\_ \$34.95

Off Shore Warrior \_\_\_\_\_ \$34.95

Art & Film Director \_\_\_\_\_ \$69.95

**MEGA ST2 TEMPORARY REDUCTION!**

Mega2 Color System: **\$1499.95**

Mega2 Mono System: **\$1299.95**

**8-Bit**

BattleZone \_\_\_\_\_ \$24.95

Gato \_\_\_\_\_ \$29.95

Sons of Liberty \_\_\_\_\_ \$34.95

Bismarck \_\_\_\_\_ \$26.95

Celebrity Cookbook \_\_\_\_\_ \$29.95

**520 ST Summer Mono Bundle**

520ST Monochrome System (SS drive) • Home Planetarium • Microsoft Write • Arrakis Educational Software • BattleZone • Missile Command

Package Price: **\$699.95**

*Limited Quantity!*

**520 ST Fall Mono Bundle**

520 ST Monochrome System (DS drive) • Microsoft Write • BattleZone • Missile Command

Package Price: **\$699.95**


**520 ST Fall Color Bundle**

520 ST Color System (DS drive) • Bentley Bear Spelling Bee • Bentley Bear Magical Math • Neochrome • Home Planetarium

Package Price: **\$849.95**

**IB Computers**

1519 SW Marlow Ave.  
Portland, OR 97210  
(503) 297-8425  
9-6 Mon.-Sat.



**IB Computers Too**

1346 NE 100th  
Portland, OR 97220  
(503) 254-9177  
Mon.-Fri. 11-7, Sat. 10-6