



mini'app'les

apple computer user group newsletter

VOLUME VI No 7

JULY 1983

CALENDAR WHICH	CALENDAR WHEN	CALENDAR WHERE	CALENDAR WHAT	CALENDAR
St. Paul Branch - Note 3	Tue July 5 7pm-10pm	Mahtomedi Fire House Hallam & Stillwater.	John Hansen on spreadsheets and Enhancer II for Videx.	
Pascal Note 1	Wed July 6 7:30pm	Minnesota Federal 9th Ave S Hopkins	Regular Pascal Special Interest Group Meeting.	
Dakota County Branch	Tue July 12 7pm-10pm	St. John Neumann Church 4030 Pilot Knob Rd, Eagan	General branch meeting. Note 7 -	
Board Meeting Note 2	Wed July 13 7:30 pm	Norwest Bank S 1st St., Hopkins	General club business. Meeting is open to all members.	
Business Note 10	Thu July 14 7:00pm	Minnesota Sch of Bus's 11 S 5th, Mpls	Scott Ueland on VersaForm	
REGULAR MINI'APP'LES Note 2 Map inside	WEDNESDAY July 20th Prgm-7:00pm SIGs-8:00pm+	UNIVERSITY MINNESOTA ST. PAUL Room B45 Bldg 412 Near State Fair Ground	Larry Mingus, Xicor Inc., will demo OmegaBoard II, an intelligent detached keyboard for][,][+ & //e.	
Minnetonka Branch	Wed July 27 7:30pm	Glen Lake Community Ctr Rm E, 14300 Excelsior Blvd	Note 8	
CP/M Note 5	Wed July 27 7:00pm	Minnesota Federal 9th Ave S Hopkins	The Evolution of ALS CP/M card and CP/M Plus.	
Pascal Note 1	Wed Aug 3 7:30pm	Minnesota Federal 9th Ave S Hopkins	Regular Pascal Special Interest Group Meeting.	
St. Paul Branch - Note 3	Tue Aug 2 7pm-10pm	Mahtomedi Fire House Hallam & Stillwater.	Chuck Thiesfeld on Pascal	
Dakota County Branch	Tue Aug 9 7pm-10pm	St. John Neumann Church 4030 Pilot Knob Rd, Eagan	Note 7	
Business Note 10	Thu Aug 11 7:00pm	Minnesota Sch of Bus's 11 S. 5th St., Mpls	Beginners' Seminar See announcements	
REGULAR MINI'APP'LES Note 2 Map next issue	WEDNESDAY August 17th Prgm-7:00pm	SCIENCE MUSEUM of MINNESOTA St. Paul	Jim Marty, Robot Project (Apple Driven) Place and topic are Tentative.	
Investment Note 4	Thu Aug 18 7:00pm	To be determined	To be determined	
VisiCalc Note 9	Tue Aug 23 7:00pm	PBS 4306 Upton Ave S.		
Minnetonka Branch	Wed Aug 24 7pm-10pm	Minnetonka High Sch Cafeteria, 18301 Hwy 7	Note 8	
CP/M Note 5	Wed Aug 24 7:00pm	Minnesota Federal 9th Ave S Hopkins		

Notes:

(See page 2 for telephone numbers.)

- | | | | |
|--------------------|--------------------|------------------|----------------------|
| 1. John Schoeppner | 4. Eric Holterman | 7. Bob Pfaff | 10. Subir Chatterjee |
| 2. Chuck Thiesfeld | 5. W. Scott Ueland | 8. Martin Thames | 11. Bill DeCoursey |
| 3. Pete Halden | 6. Dan Buchler | 9. Mike Carlson | 12. Jane Chatterjee |

MINI'APP'LES

The Minnesota Apple Computer Users' Group, Inc.
 P.O. Box 796
 Hopkins, MN 55343

MINI'APP'LES OFFICERS

President	Chase Allen	432-6245
	15718 Hayes Trail, Apple Valley, MN 55124	
Past President	Ron Androff	452-5230
	1725 Crest Ridge Lane, Eagan, MN 55122	
Vice President	Chuck Thiesfeld	831-0009
	8416 Xerxes Avenue S., Bloomington, MN 55431	
Treasurer	John L. Hansen	890-3769
	38 Birnamwood Drive, Burnsville, MN 55337	
Secretary	Hugh Kurtzman	544-7303
	11622 Live Oak Dr., Minnetonka, MN 55343	

BOARD MEMBERS

Beginners' Consultant	S.K. Johnson	869-3447
Blank Disk Bulk Purchases Co'tor	Peter Gilles	475-3916
Board members at large	Ken Slingsby	507/263-3715
	Steve George	935-5775
	Jo Hornung	922-7665
	Al Peterman	721-3295
DOM Editor	Arthur English	824-4131
Education Co'tor	Ann Bell	544-4505
Membership Co'tor	Larry Larson	788-0728
Parliamentarian	Daniel B. Buchler	890-5051
Publications Co'tor	A. Michael Young	884-2841
Publicity Co'tor	Chuck Boody	933-5290
Software Coordinator	Subir Chatterjee	330-7347
Spcl Int. - Business	Jay Warrior	626-6026
Spcl Int. - Communic'n	Jane Chatterjee	888-9447
Spcl Int. - Education	Mark Abbott	854-8304
Spcl Int. - FORTH	Bill Decoursey	574-9062
Spcl Int. - Geneology	Eric Holterman	454-5628
Spcl Int. - Invest'nt	Stewart Haight	644-1838
Spcl Int. - Medical	John Schoeppner	455-8613
Spcl Int. - Pascal	Mike Carlson	929-4120
Spcl Int. - Visicalc	Scott Ueland	623-3749
Spcl Int. - CP/M	Dave Laden	489-8321
Technical Coordinator		
Branch Co-ordinators:		
Dakota County	Bob Pfaff	452-2541
Minnetonka	Martin Thames	934-3517
St. Paul	Pete Halden	770-6624

NEWSLETTER PUBLICATION STAFF

Director & NL Editor	Daniel B. Buchler	890-5051
	13516 Grand Avenue S. Burnsville, MN 55337	
Assistant NL Editor	Jo Hornung	922-7665
Contributing Editors	Arsen Darnay	933-0399
	Rita Wetzel	474-5725
Composition	Joan Kistner	
Advertising layout	Eric Holterman	454-5628
Mailing Coordinator	Hugh Kurtzman	
	Steve George	

Circulation this issue: 2000

INFORMATION

This is the Newsletter of Mini'app'les, the Minnesota Apple Computer Users' Group, Inc., a non-profit club. Articles may be reproduced in other User Groups' publications except where specifically copyrighted by author.

Questions

Please direct questions to appropriate board member or officer. Technical questions should be directed to the Technical Coordinator.

Membership

Applications for membership should be directed to the Membership Co-ordinator: Ann Bell 544-4505
 8325 39th Avenue N.
 New Hope, Minnesota, 55427

\$12 buys membership for one year. As of Sept 1st, 1st year membership will be \$17 (includes \$5 administration fee). Members receive a subscription to this newsletter and all club benefits.

DOMs

The 3 most recent DOMs (Disk of the Month) are available at meetings for \$5/disk or any DOM may be ordered by mail for \$7.50/disk. Contact

Terry Schoeppner,
 Box 241, Inver Grove Heights
 MN, 55075 (455-8613)

Members may have DOMs copied to their own media. Contact the Vice President.

Dealers

Mini'app'les does not endorse any specific dealers but does promote distribution of information which may help club members to identify the best buys and service. Consequently, the club does participate in bulk purchases of media, software, hardware and publications on behalf of its members.

Newsletter Contributions

Please send contributions directly to the Newsletter Editor. Hard copy binary or text files are preferred, but any form will be gratefully accepted. Deadline for publication is the 1st Wednesday of the month preceding the month in which the item might be included. An article will be printed when space permits if, in the opinion of the Newsletter Editor, it constitutes suitable material for publication.

Advertising

Direct Advertising inquiries to our co-ordinator Eric Holterman at:
 PO Box 21-425
 Eagan, MN, 55121
 612-454-5628



IN THIS ISSUE

Announcements5
 Bulk Purchases
 EPS Remore Keyboard and9
 Printer Buffer
 Business Beginners11
 Case of the Blown Disk (Pascal)
 by Jim Wrenholt24
 Cheap Tricks
 by Mark Hull30
 Classified34
 Comment on Error Traps
 by Nick Fotheringham32
 Daisy Wheeling
 Happy Anniversary12
 by Arsen Darnay
 Did you Know?
 by J. Schoeppner & C. Boody32
 DOMs #24 and #25
 by Alan Peterman.....4
 Dow Jones Analyzer - a review
 by Amos Roos23
 it seems to me . . .
 by Barry D. Bayer.....22
 Screen Photos
 by Dick Marchiafava15
 Storing Dates
 by Dave Nordvall18
 Time-Share Pencil
 by Jack Turner26

ADVERTISERS

Axman Surplus.....34
 Bit 38
 City Desk Computer Warehouse..16
 Computer King.....4
 Conroy Associates.....25
 Dayton's Repair.....14
 Diskcover.....27
 Hagen Office Equipment.....23
 House of Forms.....35
 International Apple Corps.....31
 National Home Computer
 Game Exchange.....13
 Mircoworld.....29
 Onyx Computer.....10,21
 Personal Business Systems.....6
 You Can Count On It.....3
 Yukon Computer Products.....BC

Tips

by Al Peterman26
 Map of Meeting Place.....30
 Minutes - May Board Meeting
 by Hugh Kurtzman.....7
 Puzzle Answers?
 by Dan Buchler33
 Using Disk Drive Commands
 in Machine Language
 by Stephen Killough20
 Where Did My Other Basic Go?
 by Chuck Thomka28



The Brown Disc provides consistently high parametric quality and increased durability to meet every user requirement. Choices range from standard linear coated 48 TPI single density discs to the spin-coated ultra-high density 200 TPI, 15,000 BPI discs.

**you
 can
 Count
 on it**

3515 Hennepin Ave. So.
 Minneapolis, MN 55408
827-5448
 Hours:
 Monday-Friday 8-5

We're Driving the Drive Market.

DOM #24 and 25

by Alan Peterman

This month I am passing along two diskettes from the International Apple Corp. There is an educational diskette (#24) and a machine language diskette (#25). The "education" disk is full of games/learning activities for young children and the "machine language" disk has many utilities and tutorials on the use of machine language programming. Because of the inherent structure of the disks, I was not able to put the usual Mini'app'les introduction and menu programs on these disks. However, there are good menu programs and introductions on each disk.

The educational disk DOM #24 contains a very wonderful hello display in hi-res graphics that may well be worth the price of the disk. After that display it goes into a menu/explanation routine for selecting which program to run. The games are rather simple drill type games, but with innovative graphics to entertain children. Don't let my use of the term "simple drill" keep you from seeing these games. All the games have been compiled using the GALFO¹ compiler and run like lightning. ONE NOTE: the menu states that you can use the <ESC> key to get out of the games and back to the menu, but several of the games just exit to BASIC and then need rebooting to recover the menu.

DOM #25 is the I.A.C. release of the Loyal Ontario Group Interested in Computer (L.O.G.I.C.) machine language disk. It features a binary entry program, the MASM and mini assemblers, a couple of nice tutorials on machine language programming and use of the assemblers and some other basic utilities including a disassembler and a memory dump/interpreter. Each program has a tutorial or instruction program so use of the package should be fairly easy. Anyone interested in machine language programming should have this disk!

Lastly, there is an update on the Spreadsheet Sort from DOM #23, I have gotten a new version that will run on 48K and sorts negative numbers correctly. It will be released on the next general purpose DOM (probably August), but if someone needs an update sooner contact me at 721-3295. Meanwhile, have fun!

1. Chis Galfo of California wrote a very sophisticated Integer Basic Compiler which, as well as speeding up the execution of Integer Basic by several binary orders of magnitude, provides enhancements that add Applesoft features to the language. The Educational programs on the DOM are written in this enhanced version of Integer Basic. - Ed. (Information courtesy of Chuck Body)

-4-



Koalapad Graphics Tablet

\$124⁹⁵

Get computer control with the touch of a finger thanks to the KoalaPad Touch Tablet! This hand-held 6 x 8" tablet is versatile enough to use for cursor control, as a custom keyboard or for game control. KoalaPad easily connects to your Apple II, Apple IIe or Apple III computer.

DISK DRIVE CLEANING JUST \$10

This service special on disk drive cleaning is available at our Edina store only from June 23 through June 30, 1983. Call for an appointment.

COMPUTER KING

HELPING BUSINESS GET DOWN TO BUSINESS.



Computer King is a fully authorized Apple dealer offering sales, service and training.

EDINA 7101 France Ave. S. 920-1154

AND OUR TWO NEW LOCATIONS:

MINNETONKA 1808 S. Plymouth Rd. 540-0068
(Located in the Audio King store across from Ridgedale)

ROSEVILLE 1723 West Cty. Rd. B-2 636-8525
(Located in the Audio King store across from Rosedale)



ANNOUNCEMENTS

Mini'app'les meeting places

Please note that the August meeting is tentatively scheduled to be held at the Science Museum of Minnesota. The July meeting will be as usual at the U. of M. St. Paul campus. Penn Community Center is in the process of being sold. We are attempting to negotiate with the new owners for continued meetings there alternating with the U. of M. Watch the meeting place as published on the calendar for possible changes.

Mini'app'les Special Edition

The September edition of the newsletter will be a special edition to coincide with the Twin Cities Computer Show which will be held during that month. We would like the edition to contain some good feature articles and other detail. If you are thinking about submitting something, why not plan to get it to us by the beginning of August, so we can include it in that issue.

Koalapad Graphics Tablet.

You'll see at least two ads for that item in this newsletter (those advertisers know nothing about this comment). According to Barry Bayer (also elsewhere in this newsletter), it's the greatest thing since sliced bread! Anyone want to do a review!

Education SIG

by Jane Chatterjee

Our July meeting will be directly after the main meeting, on July 20th, at the U. of M. St. Paul campus.

We will be showing the demonstration discs from several educational software houses.

We held our June 6th meeting at the St. Louis Park Central Community Center, which we hope to secure on a permanent basis for our monthly meetings. It has an excellent computer centre, containing 10 Apple //es, with disk drives and monitors, linked to a hard disk and printer. The centre is available by courtesy of St. Louis Park Community Education. We feel that it is important to have a facility where people can try out software, to evaluate it for their own use. The nutritional education program 'EatSMART,' by Pillsbury, was featured at the meeting, and a brief review will appear in the July newsletter.

August meeting will be back at the St. Louis Park Center, and the date will appear in the July newsletter.

Business SIG

by Subir Chatterjee

The Business SIG met on Thursday, June 9th, at the Minnesota School of Business. Dick Marchiafava and Mike Carlson demonstrated Magic Window II and how it interfaces with Visicalc. Magic window II is a wordprocessor of the "what you see on the screen is what you get" variety, and has the ability to read DIF files created by Visicalc. Our thanks to Dick & Mike for an excellent meeting.

A new format for SIG meetings was introduced. Its purpose is to allow more time to be devoted to the needs of the first time business computer user. Future meetings will be structured so as to allow a Beginners' Question session to be run at the same time as the regular 30 minute Q & A period, followed by a 10 minute break. The meeting topic will be introduced at 7:40 pm. and end around 9.

Next month's meeting, based on the new format, will be held on July 11th at the Minnesota School of Business starting at 7:00pm. Scott Ueland will demonstrate Versaform - a flexible form generator. Time permitting, there will also be a discussion on interfacing printers (dot matrix & letter quality) with your computer.

Having established a format for future meetings, we intend to depart from it (!!) during August. The August 11th meeting will be structured as a seminar, offering 5 overlapping topics aimed at introducing basic concepts of computers in business. See elsewhere for an article on this forthcoming meeting. It will be an opportunity for you to bring along a friend, who may be contemplating buying a computer for business, and is looking for help and access to other users. More details elsewhere under **Business Beginners**.

NEW DOM CATALOGS

We have just reprinted the DOM catalogs. There is now a revised CATALOG for DOMS 1 thru 15 (\$1) and an addendum covering DOMS 16 thru 22 (\$0.50). If you think you want one and can't make it to a meeting, call Terry Schoepner or Hugh Kurtzman for our current mailing philosophy.

CP/M SIG

by W. Scott Ueland

The CP/M SIG will be holding its second organized meeting on July 27th at the Minnesota Federal Savings and Loan in Hopkins, 7:00pm. Scott Ueland will talk about the evolution of ALS.

pb PERSONAL
BUSINESS
SYSTEMS, INC.

4306 UPTON AVE. SOUTH, MINNEAPOLIS, MINN. 55410 • PHONE (612) 929-4120

2067 FORD PARKWAY, ST. PAUL, MN 55116 • PHONE (612) 698-1211

Dear Mini'app'les members:

At Personal Business Systems, we think of ourselves as service-oriented dealers. We've noticed other dealers advertising their service quite a bit lately. And we've read about club members buying do-it-yourself service kits.

Well, we'd like to tell you a bit about services that Personal Business Systems can provide for you and your Apple.

We aren't going to make outrageous claims about our competence or number of technicians (gosh, there's just the two of us, Mike and Tom, to do almost all the service work). What we do pledge is prompt, experienced service at truly reasonable prices. "Prompt" means we usually can fix your system while you wait (you can watch if you want). "Reasonable prices" means a \$15 minimum charge and \$40 per hour fee, with the minimum applying to most module swaps.

We maintain a large inventory of parts and modules. At the Highland store, Tom specializes in the Apple /// and at the Upton store, Mike in the Apple //e; we both work on Apple II and II+. We both have Apples and have been active Mini'app'les members for nearly four years. We're familiar with software as well as hardware, and can usually tell which is causing the problem. Calling for an appointment is appreciated but not always necessary. The call might help us suggest something that you might try on your own, or help us to identify what parts of your system you should bring in for service.

Making too many service trips to keep your old Apple running? Consider "AppleCare", a carry-in service agreement. As an Authorized Apple Dealer, we can offer you full parts and labor coverage on your Apple II, II+ or //e (with one disk drive), for a full year; just \$135.00. Since some of you have older systems, this could be a bargain. Apple ///'s can be covered too!

We want your service business! Sincerely,

Mike Carlson

Mike Carlson,
Manager at Upton

Tom Edwards

Tom Edwards,
Manager at Highland

SPECIALS FOR CLUB MEMBERS

Present your membership card at the time you seek service, and we'll lower the hourly charge to \$20!

OR

We'll sell you a service contract without an inspection fee! (We still have to inspect the system -- we just won't charge you for it.)



MINUTES

Announcements Concluded from page 5

INVESTMENT SIG by Eric Holterman

Our April and May Investment SIG meetings covered the Dow Jones Market Analyzer. The presentations were made by Amos Roos and the program is covered elsewhere in this issue in an article by him. Many thanks to Amos for his hard work.

The June meeting was planned to cover public domain portfolio record keeping programs. However, while I did manage to locate some of them, I did not get them in time for the meeting. With the change made to an 'open' meeting, we carried on and looked at a couple of disks from the Apple Avocation Alliance and at the Nibble Investor program, which, after we figured out what I was doing wrong, showed some promise and is available at a reasonable price. You can enter it yourself from Vol. 4, No. 2 of the magazine (the 'sell' routines are in the Vol. 4, No. 3) or the disk can be purchased from Nibble for \$23.95 plus \$1.50 postage. It includes documentation. The disk will also include Disk Map and Space Rover. (While puzzling over the investor, I successfully landed the Rover twice but died on the third attempt).

Our meeting was held at the St. Louis Park Community Computer Resource Center. While most of us found it OK, there was one among us who made the 'grand tour' and now knows the area quite well. This site was originally chosen because it had equipment on site, and the people at the center have been extremely cooperative. Now that the club has its own equipment, we are free to choose a site based solely on convenient location.

The next meeting will take place either in August or September at a site to be announced. The summer is taking its toll on attendance, so watch the newsletter for the next meeting time and place. Our meeting night has been the third Thursday of the month. If you would like to attend the SIG but find this night inconvenient, let me know or we will continue using that night. I look forward to our next meeting.

Electronic Mail

Norbery Wilson, a member of Days In Users' Group in Eau Claire, Wisconsin, invites any one interested to communicate with him via modem. He is interested in Electronic Mail specifically and is looking for others with similar interests. If you are interested, you can reach him at 1-715-834-4020.

May Board Meeting

by Hugh Kurtzman

Wednesday, May 11th, 1983 - 7:30pm.

Minutes of last board meeting were published in April newsletter. There were no corrections.

The treasurer reported balance of \$1583.05. Income for April was \$3487.47. Expenses for April were \$4524.89.

The comment was made that DOM sales were down.

OLD BUSINESS

Ann had concerns about the buffer board she is authorized to buy. It was moved that she work with Al Peterman to purchase a WIZARD 32K board.

It was discovered that the new board members had not been approved by the executive committee. The meeting was recessed so the following could be appointed:

- | | |
|-----------------------|------------------|
| Beginners Consultant | S.K. Johnson |
| Bulk Purchase Co'tor | Pete Gilles |
| At Large | Ken Slingsby |
| | Jo Hornung |
| | Steve George |
| DOM Editor | Al Peterman |
| Education Co'tor | Arthur English |
| Membership | Ann Bell |
| Publications | Dan Buchler |
| Software | Chuck Boody |
| Spcl. Int. -Business | Subir Chatterjee |
| -Communication | Jay Warrior |
| -Education | Jane Chatterjee |
| -FORTH | Mark Abbott |
| -Geneology | Bill Decoursey |
| -Investment | Eric Holterman |
| -Medical | Stewart Haight |
| -Pascal | John Schoeppner |
| -CP/M | Scott Ueland |
| Technical Co'tor | Dave Laden |
| Branch Co-ordinators: | |
| -Dakota Co. | Bob Pfaff |
| -Minnetonka | Martin Thames |
| -St. Paul | Pete Halden |

Several members commented on the restructuring of the Board. Most comments were for a change. We are not ready yet; the EXEC committee will work on it.

NEW BUSINESS

Twin City Computer Show in Sept. Moved, seconded, and passed that we participate. Dan Buchler will be chairman.

FULL-VIEW 80™

the 80 x 24 Display Card
designed for the Apple II®



Seven Reasons Why You Should Choose the FULL-VIEW 80

1. Easy-to-read upper and lower case characters with full descenders and shift-key control – line drawing graphics too! (the shift-key detector clips on, no soldering necessary!)
2. Makes word processing practical, using any of a number of systems – Executive Secretary, Letter Perfect, Magic Wand, Wordstar, etc.
3. Works with Apple II, Apple II+, Apple Pascal, Z-80 Softcard, D.C. Hayes Micromodem™, Apple Communications Card.
4. Built-in video switch lets you use either 40 or 80 column mode via keyboard or program control – no external switch.
5. Supports BASIC HTAB, VTAB, TAB, POKE 36, and COMMA commands, and also has a print screen command.
6. Has a low power requirement.
7. Best of all – easy installation. Just plug it in!

PLUS– 80 column preboot program for your VISICALC.

Send your check today to

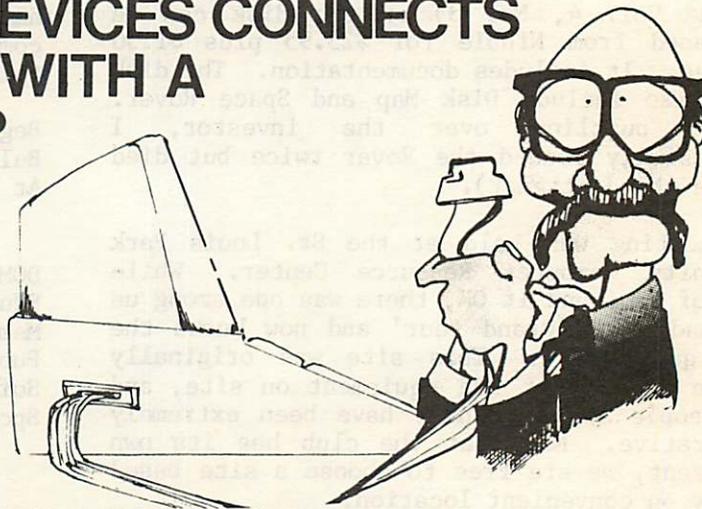


8120 PENN AVE. SOUTH
MINNEAPOLIS, MN 55431
(612) 881-6955

JULY SALE PRICE \$199

WHICH OF THESE DEVICES CONNECTS TO YOUR APPLE II® WITH A DUAL-COMM PLUS?

- (a) Any Serial Interface Printer
- (b) Any Modem
- (c) A Speech Synthesizer
- (d) A Spooling Printer Adapter
- (e) Another APPLE II
- (f) A Display Terminal
- (g) Any of the Above
- (h) Any Two of the Above



ANSWER: The correct answer is H. Circle the reader service number or contact BIT 3 for more information.

SPECIAL JULY SALE PRICE \$170

The DUAL-COMM PLUS adds two fully independent serial I/O interfaces to your APPLE II. Each serial interface can be set to respond to its own APPLE slot number or both interfaces can be operated from the same slot location. Slot locations are selected by two thumbwheel switches on the card, one for each serial port. Because each serial port has its own crystal-controlled baud rate generator, each port can be individually selected from 50 to 19200 baud. Either serial port can be used as an input port, an output port, or both. The on-board firmware provides special support for printers and modems but the card can also be used with general purpose serial devices such as a voice synthesis unit, video disks, or any number of other RS232 peripherals.

ADDITIONAL FEATURES: ■ On-board firmware provides extensive printer and U/L case terminal/modem support. Great with an 80 x 24 card (especially the Full-View 80) and a Novation CAT or Hayes Smartmodem. ■ Can be programmed for async., sync., or even SDLC operation. Supports interrupts. Uses Z80 SIO chip. ■ Works with the APPLE II PLUS, APPLE PASCAL, Z80 SOFTCARD, and 80 column cards (especially the BIT 3 FULL-VIEW 80) ■ Each port has a 4 character FIFO receive data buffer. ■ Jumper plug permits user to "customize" the RS232 connections. ■ Two 10 inch cables with RS232 connectors are included.

Quality Products by

BIT 3
COMPUTER CORPORATION

8120 Penn Avenue South,
Minneapolis, Minnesota 55431
(612) 881-6955

Apple II is a registered trademark of Apple Computer, Inc.; Z80 Softcard is a registered trademark of Microsoft Consumer Products; D.C. Hayes Micromodem and Smartmodem are trademarks of D.C. Hayes Associates, Inc.; Novation CAT is a registered trademark of Novation, Inc.



Bulk Purchases

BULK PURCHASE PLANS

The following bulk purchase arrangements have been made by club members. These members have no financial interest in the manufacturers or suppliers. The only incentive is to get a good deal for themselves and other club members. They do the planning and paperwork, and do not profit in anyway. A small handling charge to pay expenses, usually no more than 2%, maybe included in the quoted prices.

Where appropriate, purchases are arranged through local suppliers. The cost of doing so may result in a price which is higher than mail order suppliers, but in such cases, the bulk purchase coordinator feels that the support provided by the supplier is worth something.

Bulk Purchase of EPS REMOTE KEYBOARD by Earl Benser

An arrangement has been made with EPS Inc., of Palo Alto, CA for a bulk purchase of the EPS Remote Keyboard. This is a very sophisticated keyboard and includes features which fully justify its price. Some of these features are:

- Full ASCII Keyboard
- Numeric keypad with 21 keys.
- Full cursor controls (arrows)
- Screen edit controls
- 48 preprogrammed function keys for the more common programs using a plug-in ROM. Multiple keystrokes can be reduced to a single key. For example, several Apple word processors could be raised to the full professional word processor level by having a key for each major function.

The keyboard comes with a BASIC/DOS PROM, plus one other PROM of your choice. The bulk price will be \$297. (List \$383). A minimum order of 26 keyboards is necessary to achieve the price. If over 50 are ordered, the price drops to \$280.

For more information, call Earl Benser, 884-2148, evenings and weekends. The order close-out date is 1 August, 1983. You may be able to see the keyboard in action at the next meeting (July 20th). (You can also compare the EPS to the OMEGA-BOARD II, which will be demonstrated at the July 20th meeting - Ed).

Bulk Purchase of PRINTER BUFFER by Eric Holterman

The printer buffer bulk purchase proposal in last month's issue brought sufficient response to proceed with a bulk purchase for Mini'app'les members. Follow the procedures and time requirements carefully, or you may be left out.

The Wizard BPO (Buffered Parallel Output) and Wizard EBI (Epson Buffered Interface) are the two options which are available. Many club members have bought Wizards and have been satisfied with the product and the company's support. Note, if these can not meet your requirements, contact me by phone.

The Wizard BPO replaces your existing printer interface card. It acts as your printer controller and offers text formatting options along with graphics capabilities (assuming your printer has graphics). You can perform screen dumps, and, with graphics enabled, print either the primary or secondary screen, with double size, 90 degree rotation and centering options available. The basic BPO has 16K which translates into approximately 6 to 8 pages of text. An additional 16K for a total of 32K can be included at original purchase or added by you at a later date.

The BPO supports the following printers with graphics: Epson MX and FX series, C. Itoh, NEC, Okidata (with the exception of Model 84 with Step 1 firmware - you need to exchange for Step 2 firmware), Anadex, Apple Dot Matrix (specify date of purchase), IDS Micro Prism, Gemini 10 & 15, and Gemini X series. If your printer does not have graphics, please so indicate.

The Wizard EBI fits in your Epson (MX or FX 80/100) and provides buffering only. (If you don't have an Epson, this is not an option for you. Also, only the parallel version is available at this time.) You would continue to use your existing printer controller card.

Your cost for the Wizard BPO with 16K of buffering is \$140, or \$160 with 32K, plus sales tax and mailing costs (if you cannot pick it up at the August regular meeting or at my home). Cost for the Wizard EBI with 8K of buffering is \$102, \$112 for 16K, \$132 for 32K, or \$172 for 64K, plus tax and mailing if needed.

An added extra on the Wizard BPO and EBI is that they will come under Wesper Microsystems


WORD HANDLER™

easiest word processor around
simple to understand manual

The word handler's many print features are displayed on the **SCREEN**, so you can see what you get on the printer.
 Superscript, UPPER, lower case
 Free upgrade...yes, FREE.
 Special Offer ... \$ 50 rebate


LIST HANDLER™

With LIST HANDLER you can hold up to 3000 records on a drive so that 24000 can be kept on-line with multiple drive. Unlimited sort fields for:

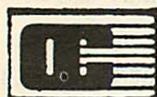
- form letters - short news
 - mailing lists - directories
 - invoices - labels
 - inventory - product lists
- see package offer

\$ 50 --- REBATE

Word Handler.....	\$ 169
List Handler.....	\$ 79
Word & List Handler.....	\$ 179

trade in any word processor & get \$ 50 rebate from us.

All software must be original with manual and in good condition. Software must retail \$ 100 or more.
 i.e. Applewriter, Acewriter, etc.



Onyx Computer

2701 E LAKE ST. MPLS. MN 55406. TELP: 612-721-1234
 Mon - Sat : 10 am - 7 pm.



Business Beginners

by Subir Chatterjee

BEGINNER'S SEMINAR
BUSINESS SIG

August 11, 1983

The Business SIG will be conducting a seminar during our August SIG meeting on the subject of 'Introduction to Business Computing': the program is designed for those who are contemplating the use of microcomputers in business and for those micro users who would now like to understand something about why they have to conform to the rules of their programs!

The Club has been committed to the principle of educating its members; however, explosive growth in the recent past has not made it easy to live up to our goals. At recent Board meetings, a considerable amount of discussion has been devoted to how best the Club can discharge its obligation for providing training: this particular program is an attempt to address similar issues within the Business SIG.

The format for the evening is such that there will be four different topics being discussed simultaneously at each of 3 sessions. It will require having to make some choices and knowing that some sessions will have to be missed. Our host, David St. George of the Minnesota School of Business, has kindly offered to make available two rooms for the evening, both equipped with microcomputers.

The topics being presented are :

- | | |
|---------------------------|------------------|
| Introduction to the Apple | Chase Allen |
| DOS Commands & Applesoft | Ken Ruzik, Jr |
| Hardware & DOM's | Al Peterman |
| CP/M - An Introduction | Kathy Leo |
| Wordprocessing | Dick Marchiafava |
| Spreadsheets | Subir Chatterjee |

Chase Allen will address issues of importance to first time micro users: particularly with respect to how the Apple executes programs. He will also discuss a multitude of "DO'S & DON'TS" that are worth knowing.

Ken Ruzik will explain what DOS is, and why our Apples cannot always do what we would wish. Of course, it could be that you need to be understood by your Apple, in which case you will want to attend his session on Applesoft commands.

Al Peterman will tackle two very different

topics : how to make all the hardware you own work together (and, occasionally, why your hardware will not work together!) and demonstrate some of the business related programs available through our Disk of the Month (DOM) library.

Kathy Leo, whom some of you may have met when she presented Quick N Easy, will explain why CP/M is popular for Business applications. (She may even be able to explain away SYSGEN and PIP !!).

Dick Marchiafava will explain some of the differences between wordprocessors, and answer some of the terms used.

Subir Chatterjee will answer the question posed him by Chase Allen some time ago, " I have a microcomputer - why should I invest in an electronic spreadsheet?" As part of that, he will address some of the differences between spreadsheets, and demonstrate some applications. The sessions are also designed to help answer questions regarding evaluating software and user benefits.

The meeting will be held at the

Minnesota School of Business,
11 South Fifth Street,
Minneapolis, MN 55402.

(This is in downtown Minneapolis, between Hennepin Av. & Nicollet Mall). Take the elevator to the 5th floor and follow signs. Car parking is available at a parking lot adjoining the building and at the parking lot across the street by Butler Square. Street parking is also available.

The meeting will start at 7 pm. with the first 20 minutes devoted to a general questions & answer period. The main program will commence at 7:30 and finish shortly after 9 pm.

For those of you who have wondered whether Apples have a place in the office, or, having placed an Apple in the office, find yourself looking for ways to increase the machine's productivity, make a point of attending this meeting. It will also provide an introduction to the Club for prospective members, so feel free to bring along a guest.





Daisy Wheeling

Happy Anniversary

by Arsen Darnay

It was a year ago, June, that I got my Apple][+ — a muggy, sunny day, it was when I hauled it home and set it up in the basement.

Cold sweat, hard breathing, and those breathless moments, waiting for the thing to blow up . . .

Complete surprise when it came on as it was supposed to and booted Apple Writer II without a hitch . . .

My 80-column card would follow later, so I saw a 40-column display with writing in caps. Capitalized letters glowed in inverse.

My Smith-Corona would come later too, but my dealer had lent me a Silenotype on which I could print out what I'd composed — and it came out in upper and in lower case just like the doctor ordered. And I was, as they say back in Missouri, in hog heaven.

So great was my fascination that it took me nearly a week to discover that the Zenith monitor could be adjusted for brightness and contrast.

By that time I had a perpetual headache from lack of sleep and staring at a screen bright enough to have done Las Vegas proud.

The special glare-killing sunglasses I used during computing — I could flip the lenses up when looking down at paper and down again when confronting screen — could be set aside at last. I rubbed vaseline on the blistered ridge of my nose where the ill-fitting glasses had injured me . . . and computered on.

* * *

The computer madness had hit me about two months earlier.

I'd finished another novel and now faced the chore of typing it all over again in one and possibly two drafts.

A friend of mine had bought a computer, and I learned with surprise that prices had dropped precipitously since I'd last looked some years ago.

The same friend gave me an old copy of Interface Age and the April 1982 issue of the Mini'app'les newsletter.

"There's a guy there called Dan Buchler. Ask him about word processing . . ."

I read every word in both publications three or four times without comprehending much. I couldn't possibly call anyone — ignorant as I was. I didn't even know what CP/M meant, and in those days that seemed to me the very key to the mystery.

* * *

The Burlington Northern runs by my house. I take my dog on walks along the tracks, out past the Minnetonka Public Works yard, and on farther to the relative wilderness of Big Willow Park.

I'd be walking, evening after evening, in a veritable fever of speculation.

They spoke a strange jargon in the computer stores — sales people and customers both — and I pondered the meaning of what I'd heard or else I licked my wounds.

I'll never forget the look one senior salesman gave me when I told him that I wanted a computer that came with a typewriter attached.

What I meant was that I would need a printer, but I was still too ignorant to call it that.

Timid, well-dressed, and middle-aged. . . They kept taking me to the IBM display while I drifted to the Osorne, drawn by price.

In some stores they ignore you when you can't talk computerese and hover like a catatonic zombie, eyes glued to some screen, tongue stiff with embarrassment.

And after I destroyed my middle-class image by sucking tooth at the mention of IBM's price, they really ignored me.

Yet all this while a desperate resolution was building up inside me. I resolved to buy the Osborne the next time I went in — this time you'll do it — if only I could sit before it and test the keyboard.

The fatal day arrived. I ghosted in and imagined the clerks snickering behind raised hands. ("There he is again, one of our 'regulars.' Don't have to bother with him. 'Just looking.' Harmless.")

Daisy Wheeling Continued

I spied the Osborne. They'd moved it way into the back, to an obscure corner where books were sold. Something glowed on the tiny screen.

I ambled back there and, still unnoticed, sat before the keyboard. WordStar was up and running — my luck.

Five seconds later I'd hung the program on the machine, I had no concept which. And now, emboldened, I intercepted one of the indifferent clerks to help me.

"Oh," she said. "That system's down. And the guy who knows the Osborne isn't here just now."

I fled. And that night, safely back in jeans that still show signs of the time when I replaced a flat roof, I thought about the Osborne's reliability and the store's ability to service an ignoramus like myself. (Who still didn't know what CP/M stood for but knew that the Osborne had one and the Apple didn't.)

* * *

Thank heaven for those seminars that astute marketers of Tron have devised to deal with computer fright.

I attended two. I scorn conducted tours. I'd rather muck about. But you learn after a while. Stranger in a strange land. I needed my hand held.

Radio Shack treated me well enough. I liked the TRS-80, Model II and Scripsit 2.0. It did everything I'd ever dreamed and more. The machine cost too much, in my opinion.

I can be ruthless when I really want something. You take my big sailboat. The second most happy day of my life was the day I bought it. The day I sold it was the happiest.

They say a boat is a hole in the water that you throw money in. I suspected that computers might be the same sort of thing. I wanted that hole to be as small as possible.

Tandy's nice folk pointed out that you can't compare Apples to TRS-80's just because they both come with a Roman II appended.

Fair enough. But the TRS-80 Models I and III lacked certain features that I wanted.

**APPLE GAME DISK
EXCHANGE**

Adventure games are great until solved. Arcade games can get stale. Now exchange an unwanted game for one you would like to play.

WRITE FOR INFORMATION
or

Send your original manufacturer's game disk, documentation, a list of five games for us to choose your exchange from & \$5.00 to:

**NATIONAL HOME COMPUTER
GAME EXCHANGE
P.O. BOX 20929
COLUMBUS, OH 43220**

**SPECIAL DISCOUNT TO APPLE
USER GROUP MEMBERS.
MENTION THE NAME OF YOUR
GROUP IN YOUR LETTER AND
EXCHANGE YOUR DISKS FOR
\$4.00 EACH. THIS OFFER
GOOD THRU OCT 31 1983**

And so did Apple. But with Apple, I had been assured, you could buy mysterious 'cards' and stick them into 'slots' to do damn near anything. And Apple Corp. seemed to have less of a strangle-hold on software than Tandy.

And I was still ignorant. When I heard words like 'card' and 'slot', I imagined cheap plastic chits that you slide into a slit as at a parking lot.

* * *

Came a certain day in June. Late June. I'd had my Apple for three weeks. I'd bought it from nice people miles from my home. A little shop. The guy who runs it likes to bicycle for exercise and has a small rear-view mirror mounted to his glasses. Now that's class.

Anyway. On this day my printer had arrived. So had my 80-column card. A few minutes of careful work — but not unlike disarming bombs — and my 'system' would be up and running.



Daisy Wheeling Concluded from page 13

By now I knew the meaning of DOS 3.3, TRS-DOS, and even CP/M. I'd even learned to use these abbreviations in complete sentences with computer-illiterates. Mr. Big. But as yet I hadn't dealt with 'chips.'

Now I would. A towel around my neck to catch the streams of nervous sweat, I cracked open my Apple. Began removing my first chip. Cute, black, rectangular bug with silvery feet. The manual that came with my card told me in no uncertain terms: DO NOT BEND THE PINS.

Sweat and tug. I'd done things by the numbers. I even had three pennies, wrapped in sticky tape, wedged under the motherboard to hold it flat. The chip refused to move.

And when at last I ripped it from its mother's womb, the black bug's silver legs were bent into spaghetti. I'd squashed the poor thing.

I'll never forget that day. Nor will my wife. Bedlam must have seemed a place of deep serenity and calm compared with our house that day.

Rattled by the bent pins of my IC chip, I put it in upside down and just, I mean just barely, avoided burning up a \$400 'card' (which, by the way, looked more like a Star Wars cityscape than a plastic chit).

Then my printer failed to obey my Apple Writer II. It wouldn't set the margins. Not love, not money, not curses. Frantic phone calls. A trip back to the dealer. Consultations. They told me to try a little program with the magic word CHR\$(4) ahead of PR#1. Never heard of it. With CP/M behind me, CHR\$ would be easy. After I was up and running. Back into the Bessemer furnace on wheels — my car glaring in the sun.

But back home again I found that CHR\$ had no power. I called again. In a trembling voice I promised that I would bring it all back, Apple, Disk II, card, printer, software, and manuals and toss the whole #*%\$# mess right through the storefront glass unless I got instant gratification.

I must have sounded dangerously unstable. While I paced and waited — and my wife hid in an upstairs bedroom and ran a vacuum to drown out my occasional Tarzan screams — my dealer replicated my 'configuration' miles away and . . . found that I'd gotten the wrong card to drive the printer!

We solve the problems of the problem-solvers.

Dayton's Computer Repair Service

We're fully authorized for servicing the Apple® and the Osborne computers, as well as the IBM Personal Computer. We handle in-warranty, as well as out-of-warranty repairs, and offer extended service contracts that cover the cost of parts and labor. You may charge repairs on your Dayton's Flexible, Furnish-A-Home, or Invoice Accounts. The American Express® Card is also honored at Dayton's. Bring your computer in to 701 Industrial Blvd. for repairs, or call for on-site service at your home or office. Dayton's Electronic Service: 375-2586; 375-2587.

DAYTON'S

I felt a sense of great relief. So what's another (third) trip to my store? I'll be up and running by nightfall.

And I was. Everything worked at last. Hog heaven again. My wife removed the Dutch hex signs she'd hung around the house to ward off my evil emanations. Fanfold paper rushed slowly (12 CPS) through my machine. Eighty columns glowed in upper and in lower case. I had arrived at last.

* * *

So, Happy Anniversary. I've learned a lot since then. CHR\$ now obeys me. I've even gone back to that first computer store and chatted amiably, in jargon, with the clerks . . . while some sad-looking zombies stared at screens and glanced at us furtively, enviously.

The other day someone asked me what CP/M meant. And you know something — I





SCREEN PHOTOS

by Dick Marchiafava

MAKING SLIDES FROM A COMPUTER VIDEO SCREEN

How to make slides for displaying text to large groups for software demonstrations. A simple and inexpensive solution.

A common problem that many computer groups have is that of showing a number of people (more than three) what is displayed on a video monitor when presenting software demonstrations. What follows is a description of a method for doing this. It does not provide a "live" display, but this should not be a problem for a planned presentation, and the computer can be running the software simultaneously.

In January, Kathleen and Brent, Business SIG members from Interactive Systems, demonstrated QUIC-N-EASI to the business SIG. An important part of their presentation was the use of color slides to show a large room full of people the various screens that were necessary to their demo, without the members straining around 12 inch monitors to see the display. This was a big improvement!

In making the slides Brent used a color slide (positive) film. The drawback of this was that the projected slides, in black with green text, were somewhat dim. This is caused by the speed of the film, the fact that most of the projection screen was black, as is the screen on a video monitor, and possibly the response of the film emulsion to the light wave component of the green phosphors of the video screen. It is likely that color slide film would give brighter results with an amber video screen.

I decided to explore the possibilities of getting brighter slides. First, I found that there was no faster color positive film available. In response to my inquiry about black and white positive film I was informed that such things are not generally available now, and I would have to process the film myself. This was not the simple solution I was after!

After discussion of some complicated possibilities, inspiration! All I was after was a bright image to display text. I could project slides made from negative film and get black text on a white background; a "LISA"-like display!

Tests have proved this is possible. Making slides this way is easy to do and inexpensive if one has the camera equipment available.

HOW TO DO IT

Equipment

Camera: A 35mm Single Lens Reflex type. It must have an automatic thru the lens light meter to control the shutter speed, and allow aperture priority operation.

Lens: Use a telephoto lens if available, both to fill the viewfinder and to get the flattening effect which a long lens gives. This is not the place to use your close up adapters, so put them away. You will be photographing a curved screen, and you will wish to minimize the curved effect in order to keep text at the edge of the screen from blurring. I used a zoom lens of 200mm, which worked well.

Tripod: Use a sturdy tripod; some of the exposure times can get long.

Other equipment: Cable release, motor drive if you have one and a flashlight (yes flashlight, not flashgun!).

The Film

Use the highest speed 35mm black and white film you can find. I used Ilford HP-5, shot at ASA 800. This meant that the camera shop had to use "push processing" when developing the film. CAUTION! When selecting the film be aware that there are now black and white films on the market that are developed using color chemistry (C-41). These films have a color mask, like color negative films do. This is not a problem when making prints, but the mask cuts the brightness of the image considerably when using these negative slides for projection.

The Set Up

Set the camera at the distance necessary to fill the viewfinder well. Set some text or something on the computer screen to use for a target for centering and focusing. Use the smallest aperture that you can in order to minimize the effect of the curved screen. Open the lens only if absolutely necessary. I used F/22 for all slides of the computer screen.

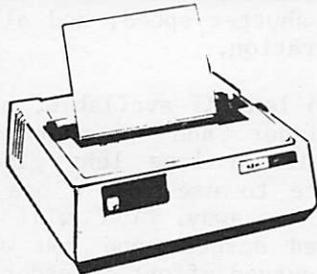
WE'RE NO. 1

IN SERVICE • AVAILABILITY • PRICE

We guarantee it, City Desk Computer Warehouse will not be undersold. And, it's nearly impossible to beat our service. Normally, we fulfill an order and ship it via UPS within 24 hours from when we receive the order. If you need it even sooner pick it up yourself at our offices.

call (612) 933-1771 or mail the order form below.

OKIDATA MICROLINE 92



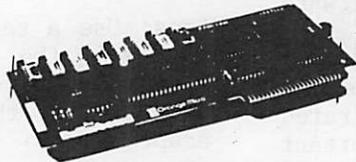
- 160 CPS print speed
- Correspondence quality mode
- Bi-directional logic seeking
- Friction and tractor feed
- Lower case decenders
- Subscripts, superscripts & underling

@ \$539.95

Qty.

The Bufferboard

For Apples and Printers



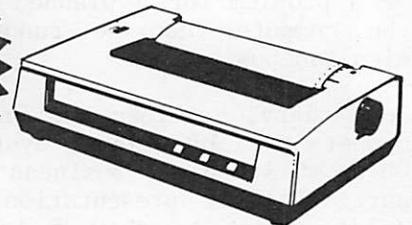
- Plugs into the Apple
- Standard 16K memory buffer
- Upgradeable to 32K or 64K
- Automatic memory configuration
- Speeds operation of printers with no buffer
- Easy to install and operate

@ \$127.00

Qty.



PROWRITER 8510



- 120 CPS Print Speed
- 1K Buffer
- 136 characters per line
- Friction and tractor feed
- Adjustable tractors

Subject to availability @ \$375.00

Qty.

PRINTERS

___ C. ITOH Prowriter 8510 P	@ \$ 375.00
___ OKIDATA Microline 82A P	@ \$ 429.95
___ OKIDATA Microline 84 P	@ \$1,025.95
___ OKIDATA Microline 92 P	@ \$ 539.95
___ OKIDATA Microline 93 P	@ \$ 910.95
___ NEC PC-8023 A P	@ \$ 499.95
___ QUME Sprint II	@ \$1,449.95

Qty

Some Printers subject to availability

INTERFACE CARDS

___ Grappler + Graphics Interface	@ \$ 127.00
___ The Bufferboard (Printer Buffer)	@ \$ 127.00
___ Buffered Grappler + (Bufferboard & Grappler combined)	@ \$ 185.00

Qty

9 1/2 x 11 TRACTOR PAPER

___ 3200 sheets white 15 lb.	@ \$23.50
___ 2500 sheets white 20 lb.	@ \$20.00
___ 11 x 14 7/8 wide paper	
___ 5000 Continuous labels	@ \$15.25
___ 2000 labels with 9 1/2" Carrier	@ \$ 9.25
___ Tractor Index Cards	

Qty

RIBBONS

___ EPSON MX-80, FX-80	@ \$ 5.70
___ EPSON MX-100	@ \$11.95
___ NEC PC-8023A	@ \$ 5.70
___ C. ITOH Prowriter	@ \$ 5.70
___ Paper Tiger	@ \$ 9.25
___ OKIDATA Microline	@ \$ 2.25
___ OKIDATA Microline 84	@ \$ 5.36
___ QUME Sprint m/s	@ \$ 5.49

Qty

5 1/4" Library case @ \$ 2.50

DISKETTES

All Formats Available

FOR THE BEST PRICES ON DISKETTES CALL CITY DESK

Verbatim maxell ELEPHANT



ELEPHANT MEMORY #1 DISKETTES

NOW ONLY **\$17.50**/box

Send your order to: City Desk Computer Warehouse P.O. Box 16152, Mpls. MN 55416 **Call Our Bulletin Board (612) 929-8966**

- Please ship my order C.O.D. via UPS.
- Enclosed is my check or money order plus 6% sales tax & shipping. (call for shipping rates)
- Check or money order enclosed for \$ _____

Name _____
 Address _____
 City _____ State _____ Zip _____
 Telephone _____

CITY DESK COMPUTER WAREHOUSE

(612) 933-1771

420 Excelsior Avenue East, Suite 101, Hopkins, MN 55343



Screen Photos Concluded from page 15

Set the meter to control the shutter. All photos of the screen are shot in a dark room to prevent light from any source other than the video screen affecting the light meter.

Shooting The Slides

Set the computer screen for a bright image, but avoid having the text "bloom" excessively. That could give unreadable text on the slide. The exposure time will vary depending on the amount of text that is being displayed. This is the reason for automatic exposure control here.

Take your slide photos, working from a list of the various computer screens you wish to show.

Now for the flashlight! Since the shots are made in a dark room, and you are in tight to the computer screen, you will lose your edge reference from one frame of the film to the next. The only thing that shows is text. This makes it difficult to cut the film into the correct length for the slide, and maintain the same centering that was used in setting up. So, on alternate frames (or what ever) you can make a guide frame for measuring and cutting by setting the camera to manual operation and set the shutter for a long exposure time. Now overexpose the frame with the flashlight.

Developing The Film

You should have this film developed by a processor who will push the development for you, if needed. Tell the processor what film speed (ASA/DIN rating) you used. It is best to include a written explanation of what you need. If the negative is cut into strips for you, you will have to explain the purpose of the guide frames. This can be avoided by having the film returned to you in a roll, uncut. This avoids one problem, but results in a curly film to handle, cut and mount. There is no need to have prints made.

Making The Slides

The simplest way to do this is to buy some plastic slide mounts that you slip the cut negatives into. If you buy the slide mounts from the shop that processed your film, they may tend to think more kindly of you. After all, you did not buy any prints.

Conclusions

The slides made in this manner are a cost effective and practical solution to the problem of the limited viewing capabilities of a computer screen. I have only used this method for displaying text, but the method should work for charts and graphics, too. It should work for anything that does not require color!

I started this project in early 1983. There are some new higher speed films, both black and white negative and color positive film, that will be introduced soon. It may well be possible to show those color computer displays to the entire club soon!



Bulk Purchases Concluded from page 9

lifetime warranty offer for purchases made by August 31, 1983. Warranty service will be handled through the local dealer. Routine questions will be handled by me, (please read the manual before calling with questions).

Product description sheets will be available at the July 20 regular meeting. I will not be at that meeting. To obtain more information, phone me at 454-5628 before July 8 or on or after July 25, or write to me at the address below. There is not much time available, so do not delay your consideration of this offer.

When you have decided on what you want, send a check for your deposit for \$50 (payable to Eric Holterman) to me at P.O. Box 21-425, Eagan, MN 55121, so that it is received by July 26. Include your address, phone number and type of printer if ordering the BPO. This will be considered a firm order.

We must have an order for at least 10 units to obtain the above prices and no deposit checks will be cashed until we have at least 10 orders. If 10 orders are not received by July 26, deposit checks will be returned to you. A large number of orders could get us a better price. Assuming that 10 orders are received, the remaining amount due must be paid by the earlier of the date you pick up your order or August 17. Orders may be picked up at the meeting on Wednesday, August 17. Under no circumstances will an order be delivered without full payment.



Storing Dates

by David Nordvall

Most problems in programming have been solved in some way or another. Being self taught for the most part, I feel good when I come up with an idea that I have not seen before that works.

While working on a program last year I needed a way to save a lot of dates. A fixed format was needed so they could be part of a random access file and I did not want them messing up my screen display as they were entered.

At that time I developed a routine that would accept any date from 1970 to 2066; leap year would be taken care of. The date would be forced in to the string format MM/DD/YY. The cursor would define the display location on the screen and the input would be held to that line. Error messages would use line 24. There have been many ways of doing this and I will leave it to you to go over lines 169 to 190 of the listing.

In an application for storing Boy Scout merit badge data, which included a lot of date values in which eight bytes were used to store one date, I ran out of disk space. I had read somewhere about a routine to find the number of days between two dates and it used the "Julian" calendar. March 12, 1983 (3 /12/83) translates in Julian into 83071 — the last two digits of the year x 1000 plus the day of the year. This reduces the length of the date to 5 characters.

Implementing the conversion (lines 200 to 205) was not hard. Pick off the year with the "RIGHT\$" command, the month with the "LEFT\$" command, and the day with the "MID\$" command. Now multiply the year by 1000 add the number of days in the previous months (from a table MO(12)) and add the day of the current month.

Time out for "Modulo". If you divide 11 by 3, the answer is 3 with a remainder of 2. Therefore 11 modulo 3 is 2, or $A \text{ modulo } B = \text{the remainder of } A/B$. In Applesoft there is not a "Mod" command and we have to make one per page 105 of the Applesoft reference manual.

The last statement of line 202 does a "Year" Mod 4 to find if it is a leap year. Line 203 check for a year over 1999 ($Y1 < 70 - Y1$ is between 0 and 99) and adds 10000 if in the 21st century. This results in 6 character dates. For example March 12, 2001, converts to 100071. Dec. 31, 2069, converts to 169365. If the above Julian date were stored as Hex, the resulting number would be \$29594. This led to the idea that ASCII is a way of counting in the base 128.

The largest number that may be represented by

- a) two ASCII characters is $128^{**}2-1 = 16383$
- b) three ASCII characters is $128^{**}3-1 = 2097151$

The first is too small and the second is too big. With the same mathematics as above, I found that the base 55 yielded a maximum value of 166374 ($55^{**}3-1$) with three "digits". Any group of 55 ASCII characters will do for the counting. Line 207 takes the Julian date, uses Mod 55 three times and converts it to an ASCII character. To keep the character visible, 32 is added after converting. A three character string is built that represents the date. A 62% reduction.

Line 210 changes the string \$T55 back to a Julian date and line 212 to 213 changes the Julian date back to the form MM/DD/YY.

To use this routine, GOSUB 170 for the date input. There must be 16 spaces left on the line for proper screen formatting. The date is returned as the string DT\$.

GOSUB 200 Changes DT\$ to a Julian date DJ.

GOSUB 206 Changes DJ to MOD 55 date string T55\$.

This string T55\$ is to be changed to the variable used in your program and stored as required (three characters). To go back the other way, read the date back from disk and set it equal to T55\$.

GOSUB 209 Changes T55\$ to DJ.

GOSUB 211 Changes DJ to DT\$ (MM/DD/YY).

Lines 50 to 140 are just to demonstrate what is happening when the routines are called.

```

10 HOME
50 GOSUB 170
55 DA$ = DT$
60 GOSUB 200
65 PRINT DJ
70 GOSUB 206: PRINT T55$
75 D$ = CHR$(4): PRINT D$"OPEN TEST"
80 PRINT D$"WRITE TEST"
85 PRINT T55$
90 PRINT D$"CLOSE"
95 D$ = CHR$(4): PRINT D$"OPEN TEST"
100 PRINT D$"READ TEST"
105 INPUT A$
110 PRINT D$"CLOSE"
115 PRINT "A$ = ";A$
  
```



```

CHANGES DATE DT$
(MM/DD/YY) TO (YYYYDD)
USES Y1,M2,MO(12)
RETURNS DJ
YEARS 2000 TO 2067 AS IYYDD
201 Y1 = VAL ( RIGHT$ (DA$,2)) :
IF MO = 0 THEN GOSUB 205
M2 = VAL ( LEFT$ (DA$,2)) :
DJ = VAL ( MID$ (DA$,4,2)) + MO(M2) :
IF Y1 - INT ( Y1 / 4 ) * 4 = 0 AND
M2 < 2 THEN DJ = DJ + 1
DJ = DJ + Y1 * 1000 :
IF Y1 > 70 THEN DJ = DJ + 10000
204 RETURN
DIM MO(12):MO = 1 :
MO(2) = 31:MO(3) = 59 :
MO(4) = 90:MO(5) = 120 :
MO(6) = 151: MO(7) = 181 :
MO(8) = 212: MO(9) = 242 :
MO(10) = 273:MO(11) = 304 :
MO(12) = 334: RETURN
206 REM
CHANGE DJ (YYYYDD) TO BASE 55
RETURNS T55$
USES I,L,M,A$
USE T55$ TO STORE ON DISK
174 REM
GETS DAY
207 T55$ = M = DJ: FOR I = 0 TO 3 :
L = INT ( M / 55 ) :
T55$ = CHR$ ( 32 + M - L * 55 ) + T55$ :
M = L: IF M > 0 THEN NEXT
208 RETURN
209 REM
CHANGES T55$ TO DJ (YYYYDD)
RETURNS DJ
USES I,A$
210 DJ = 0: FOR I = 0 TO LEN (T55$) - 1 :
A$ = MID$ (T55$, LEN (T55$) - I, 1) :
DJ = DJ + (( ASC (A$) * 32) * 55 - I) :
IF VAL (T$) < 0 OR VAL (T$) > 99
THEN GOSUB 189: GOTO 182
GOSUB 190:DT$ = DT$ + T$
HTAB CV: HTAB CH: CALL - 958:
PRINT DT$: RETURN
211 REM
CHANGES DJ TO DT$ (MM/DD/YY)
RETURNS DT$
USES I,L,MO(12)
212 L = INT (DJ / 1000) :
DT$ = RIGHT$ ("0",2) + STR$ (L,2) :
L = DJ - L * 1000 :
FOR I = 12 TO 1 STEP - 1 :
IF MO(I) > L THEN NEXT
DT$ = LEFT$ ( STR$ (L - MO(I)) + " ",2) +
"/" + DT$ : RETURN
213 DT$ = LEFT$ ( STR$ (I) + " ",2) +
"/" +
" " : RETURN
200 REM

```

```

120 T55$ = A$
GOSUB 209: PRINT DJ
130 GOSUB 211
135 PRINT DT$
140 GOTO 50
169 REM
GETS DATE DT$ IN FORMAT MM/DD/YY
RETURNS DT$
USES CH,CV,I,L,M,A$,T$
WORKS AT CURSOR POSITION CALLED FROM
GOOD FOR YEARS 1970 TO 2067
ERROR MESSAGES AT LINE 24
CH = PEEK (36) + 1 :
CV = PEEK (37) + 1: DT$ = " "
HTAB CH: HTAB CV:
PRINT " MONTH ---":DT$:
HTAB CH + 7 :
GOSUB 187
L = VAL (T$)
IF L < 1 OR L > 12 THEN GOSUB 189:
GOTO 171
173 IF L < 1 OR L > 12 THEN GOSUB 189:
GOTO 171
174 REM
175 GOSUB 190:DT$ = T$ + "/"
HTAB CH: HTAB CV:
PRINT " DAY ":DT$:
HTAB CH + 10: GOSUB 187
M = 31: IF L = 2 THEN M = 27
M = 31: IF L = 4 OR L = 6 OR L = 9 OR L = 11
THEN M = 30
IF VAL (T$) < 1 OR VAL (T$) > M THEN
GOSUB 189: GOTO 176
GOSUB 190:DT$ = DT$ + T$ + "/"
HTAB CH: HTAB CV:
PRINT " YEAR ":DT$:
HTAB CH + 13: GOSUB 187
IF VAL (T$) < 0 OR VAL (T$) > 99
THEN GOSUB 189: GOTO 182
GOSUB 190:DT$ = DT$ + T$
HTAB CV: HTAB CH: CALL - 958:
PRINT DT$: RETURN
186 REM
GET STRING FOR DATE
187 T$ = " " : FOR I = 1 TO 2: GET A$:
IF ASC (A$) = 13 THEN A$ = " "
PRINT A$:T$ = T$ + A$: NEXT : RETURN
188 PRINT A$:T$ = T$ + A$: NEXT : RETURN
189 HTAB 24: HTAB 1 :
PRINT "INCORRECT ENTRY":
RETURN : REM ERROR NOTE
190 HTAB 24: HTAB 1: CALL - 868: RETURN :
REM ERROR CLEAR
200 REM

```



Using Disk Drive Commands in Machine Language

by Stephen Killough

Reprinted from Apple Computer Enjoyment Society
Fort Lauderdale, Florida
Vol 3 No 3, May/June 1981
Relayed via the IAC Compiler

Sometimes when programming in assembly language, it is necessary to use one of the regular disk commands, such as BLOAD, BSAVE, etc. The usual procedure is to have an accompanying BASIC program handle the disk commands and call the machine routine. Sometimes it would be more convenient, though, if it were possible to use the disk without switching back and forth between languages. Here is a method of doing just that.

Basically, the method of controlling the disk by printing the command with a CTRL-D in front of it is valid even in machine language, providing the printing is done by the COUT routine (see pages 30 and 61 of the APPLE [REFERENCE MANUAL]). Your machine language routine should send out, one by one via the COUT routine, the ConTRoL-D, and command characters, and the return character. An example of a machine language routine that would perform a "CATALOG" is shown below:

```
LDA #$84      ;code for CTRL-D
JSR $FDED    ;COUT address
LDA #$C3     ;code for C
JSR $FDED
LDA #$C1     ;code for A
JSR $FDED
LDA #$D4     ;code for T
JSR $FDED
LDA #$C1     ;code for A
JSR $FDED
LDA #$CC     ;code for L
JSR $FDED
LDA #$CF     ;code for O
JSR $FDED
LDA #$C7     ;code for G
JSR $FDED
LDA #$8D     ;carriage return
JSR $FDED
```

The hex codes for these characters can be found on page 7 of the REFERENCE MANUAL.

A more elaborate example shown here includes prompting to ask the user which file is to be loaded. This routine uses the GETLN routine (see pages 33 and 62 of the REFERENCE MANUAL) to get the prompted file name. This name, stored in locations \$200 to \$300, must be relocated before the output routine starts.

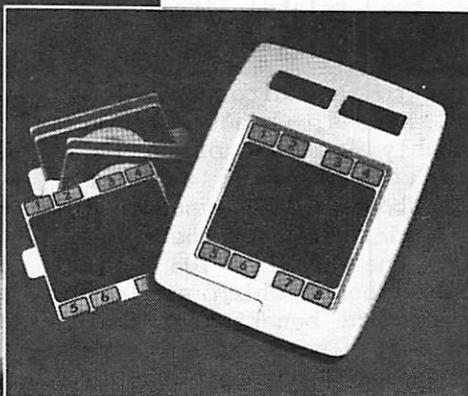
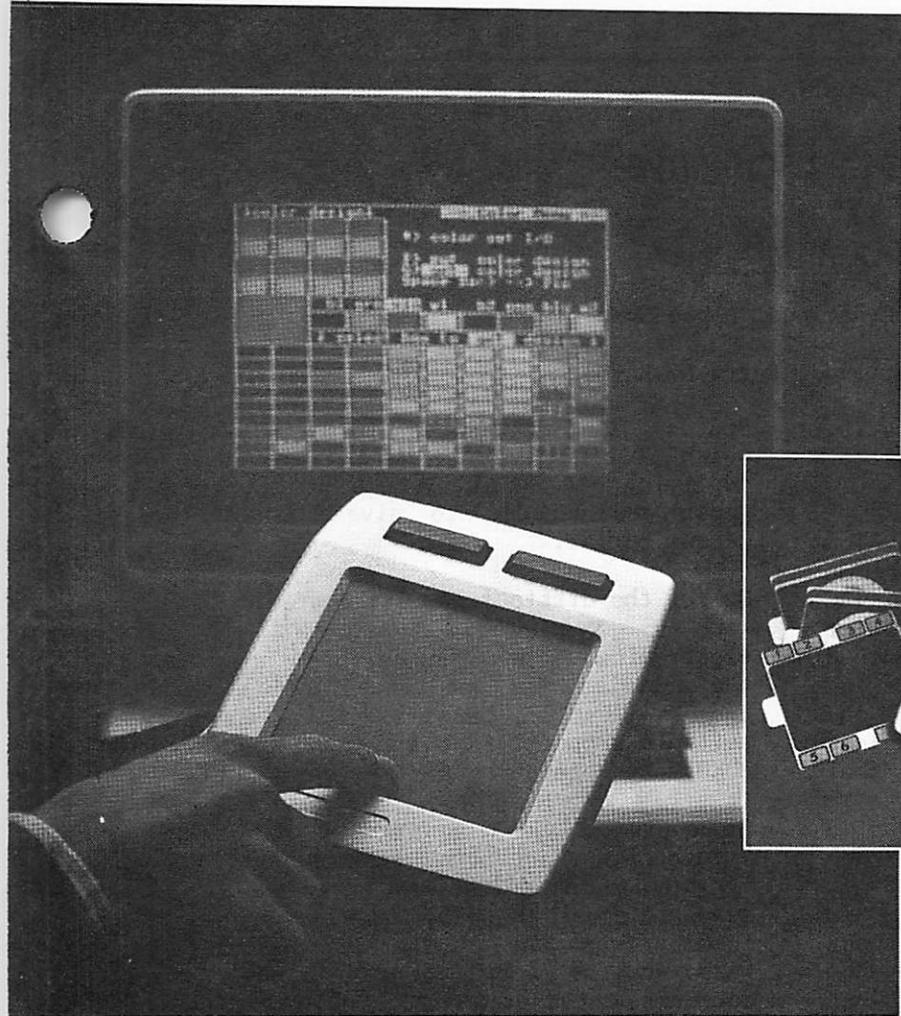
```
9000: LDY #$01      ;send out a "NAME?"
9002: LDX #$06      ;prompt
9004: LDA $90F0,Y
9007: JSR $FDED    ;via COUT
900A: INY
900B: DEX
900C: BNE $9004    ;get next character
900E: JSR $FD6F    ;GETLN routine
9011: TXA
9012: TAY
9013: LDA $0200,Y ;relocate filename
9016: STA $9098,Y ;to $9098-
9019: DEY
901A: BNE $9013    ;get next character
901C: LDA $0200
901F: STA $9098

9022: CLC
9023: TXA
9024: ADC #$07
9026: TAX
9027: LDY #$01
9029: LDA $9090,Y ;load "BLOAD file-"
902C: JSR $FDED    ;send out via COUT
902F: INY
9030: DEX
9031: BNE $9029
9033: LDA #$8D     ;return code
9035: JSR $FDED    ;through COUT
9038: RTS
```

Character storage:

```
9091: 84           ;control-D char
9092: C2           ; B char
9093: CC           ; L char
9094: CF           ; O char
9095: C1           ; A char
9096: C4           ; D char
9097: A0           ; space char
9098: ?           ;filename chars
9099: ?           ; continued...
90A0: ?
```

```
90F1: CE           ; N char
90F2: C1           ; A char
90F3: CD           ; M char
90F4: C5           ; E char
90F5: BF           ; ? char
90F6: 8D           ;return char
```



The KoalaPad™ Touch Tablet—a new dimension in computer control—with the touch of a finger.

Total Versatility

- **Cursor Control** - The KoalaPad™ Touch Tablet faithfully reproduces drawn, traced, or written images and performs menu selections.
- **Custom Keyboard** - overlays define the 4" x 4" active service as any combination of characters, graphic elements, or geometric symbols.
- **Game Controller** - Many games are far easier and movements more accurate with the KoalaPad™ Touch Tablet. The Touch Tablet is a direct replacement for paddle controllers and analog joysticks.

Easy To Use

- Suitable for all ages: pre-school to adult.
- Connects to most popular personal computers including Apple, Atari, Commodore and IBM

through the game controller port. No additional hardware required.

- Two "fire" buttons provided for use with entertainment packages or for menu selection.

Designed For The Consumer

- Comfortable for hand held use—6" x 8" x 1" and weighs less than one pound.
- Display enlarges automatically to the size of the monitor or TV screen.
- Rugged and abuse-resistant.

The KoalaPad™ Touch Tablet and KoalaWare™ software packages allow a natural interface to the computer . . . with the touch of a finger.

 **Onyx Computer**

2701 EAST KAKE ST., MINNEAPOLIS, MN. 55406
612-721-1234 — OPEN Mon - Sat. 10 A.M.-7 P.M.

it seems to me . . .

by Barry D Bayer

Director, International Apple Core, Inc.

Copyright 1983, Barry D. Bayer

The latest issue of InfoWorld (Volume 5, Number 23) carries two related items of interest to Apple owners.

The first was a Letter to the Editor from Tom Weishaar of Overland, Kansas, undoubtedly an Apple user, and probably a member of an IAC affiliated club, who complained of a prior InfoWorld article about "the supposed dominance of CP/M as a microcomputer operating system." Mentioning the BASIS 108 and Quadram's new Quadlink, board which at long last gives IBM PC owners the benefits of real software, Tom claimed that "There are now more than 1 million machines that run Apple DOS in the U.S. Programs and peripherals are completely portable within this pool."

Tom may have overstated his point about universal compatibility a bit. Given the state of the "copy protection" art being what it is, some of the programs available don't even run on my Apple II. Because the Apple II was originally designed as a cassette based system, the operating system was kludged to insinuate itself into BASIC rather than to be an integral part of it. Despite this, it has done very well for itself. Sure, it's slow. And sure, the control-D protocol seems ridiculous to "real" programmers accustomed to dealing with "real" operating systems. And sure, DOS 3.3 is not "standard" (read "manufacturer supplied for non-Apple systems"). But the system does work, and with a little fiddling here and there can be made to work really well. (I understand that Diversi-DOS and David DOS can be patched together and, when coupled with a Saturn Systems Accelerator Board, and maybe a small hard disk, will really make your Apple fly.) And, of course, if you really insist on using CP/M, you can now get an add-on Z-80 card "free" when you purchase WordStar.

The second InfoWorld piece was a series of articles on "obsolete computers". To those of us who were drooling over the fledgling micro industry back 7 and 8 years ago, names like Sol and Sphere, Wave Mate and IMSAI and Altair, present a real exercise in nostalgia. I hadn't realized that the Sorcerer (originally sold by Exidy) was still being manufactured (by CompuData in Holland, and by Dallas's Dynasty Corporation in the United

States). And it was news to me that a company which had specialized in repairing and modifying old IMSAI systems had given up the ghost and decided to give the machine "a decent burial."

One of the difficulties, of course, is dealing with 8 year old "state of the art" electronics. The other problem according to the articles, is that these machines (most of them 8080 CPU based) simply don't have software support. (But I thought that CP/M, an 8080 based operating system, was universal!)

Of course, I own a computer designed with "state of the art" (in 1977) electronics. And my machine doesn't even have the "industry standard" S-100 buss. (Does anyone else remember what the original name of the design was?) And the machine is 6502 based, like game machines, rather than built around the "serious" 8080 and Z-80 CPUs. Yet my Apple][, thanks to what must be at least a little foresight, and certainly to an awful lot of luck, is still going strong, in the 7th year after its introduction. Of course the 4K RAM, cassette based, 40 column upper case only machine with Integer BASIC is a little different from the 128K, 80 Column, //e. But obsolete? Well, not this year, certainly. And probably not for quite a while to come.

** ** ** ** **

One of the things that has kept the Apple personal computer(s) young, has been the Apple User Groups, and the steady exchange of hardware and software ideas that have come from one Apple User to another. The International Apple Core, an association of more than 425 Apple User Groups throughout the world, seeks to further this exchange through The Apple Orchard, our 9 issue per year magazine which will soon grow to 12 issues per year; Special Interest Groups, which will work with the SIGs in your local users group, or directly with you if your AUG doesn't have a SIG in your area of interest; with Disks of the Month; with property damage insurance for your computer; and with many other projects. We at the IAC are here to help you and your AUG. Please let us know if we can be of an assistance.



Dow Jones Analyzer

by Amos Roos

At the April and May meetings the Investment SIG looked at the Dow Jones Market Analyzer (DJMA), which is copyrighted by RTR Software, Inc. (the original authors) and Dow Jones & Co., Inc. (now marketing the product).

The Dow Jones data base includes a variety of business and general news, as well as complete stock quotes for the past several years. DJMA accesses quotes for the most recent year, stores them to disk, provides for data editing and listing, and offers several dozen kinds of stock charts which may be plotted at will.

You can collect a full year's price-and volume history on any stock, bond, etc. (listed or NASDAQ OTC) at one time (about 20 minutes connect time at 300 baud) as well as collecting the current day's quotes on any number of stocks. These chores are done automatically, with automatic dial-up and log-on.

Once data are collected, there are several ways of comparing the performance of one stock against another, or against an index if you have the patience to key in any index's history since this information cannot be collected like a security's history can.

Most important are the standard stock charts. Brokerage houses get these from statistical services, but DJMA allows you to plot them, at home and up-to-date.

There's an extensive body of literature on mathematical analysis of stock price movements and price/volume relationships. DJMA's main purpose is to allow you to chart many of these relationships. These include moving averages of three different types, for any period; offsets of these averages, both vertically (% of price) and horizontally (at any point in the time period); and listings of the averages' values, either on screen or printer.

The program will draw a variety of straight lines on a chart, including linear least-squares fit, trend, and lines parallel to either of these, as well as horizontal (constant price) and speed-resistance lines. A chart's horizontal and vertical scales can each be adjusted, as well as extended up to ten trading days into the future. Regrettably, these extended charts don't include stock quotes. They only enable you to project trends forward.

Six different price/volume indicators (including Joe Granville's "on-balance volume"), as well as their simple moving averages, can be plotted. Oscillator charts, which show the relationship between any two

arbitrary data points, can be plotted in either line or bar form together with their moving averages. (As an example of "two arbitrary data points," we could chart the difference between a stock's close on one day and its high the next day, or between a day's volume and the seven-day exponential moving average a week later, if you thought that such a relationship would help you forecast the stock's moves!)

Of course, all these plots are in the colors of your choice; my monochrome monitor makes them all green.

If you have a hi-res screen dump routine, charts can be dumped to printer; if not, they can be dumped to disk and subsequently to printer.

All of these routines can be plotted automatically, and the sequence of instructions saved on the data disk. Thus, you can set it up and come back a half-hour later with twenty charts spit out on your printer!

There are many useful things the program will not do. While copy-protected, it can be copied by using FID, so it's not difficult to modify it yourself. I will be glad to help others with these modifications (home phone 646-8217).



Professional Service

Get it done right the first time!

We give quality service on all Apple products and Epson printers.

Need on-site repair?

Call us-- on site and maintenance contracts available.

hagen

OFFICE EQUIPMENT, INC.

801 WEST 77 $\frac{1}{2}$ STREET
RICHFIELD, MINNESOTA 55423 866-3441



The Case of the Blown Disk (Pascal)

by Jim Wrenholt

Reprinted from The Scarlett Letter
Published by the Big Apple User Group
Relayed via the IAC Compiler

I've been spending my spare time lately learning my way around the Pascal system on my Apple. After reading through an introductory book on the subject, I thought myself ready to study some actual Pascal programs. Well, after five minutes of fiddling around I succeeded only in obliterating my disk's directory. I still don't know what magical set of keystrokes causes the disaster.

Being a veteran of such DOS catastrophies, my first thought was to get out my Disk ZAP and fix the disk. Pascal lives on the disk in 16 sector format, so that my ZAP (track/sector read/write routine) is capable of reading it. After spending a little time looking, I became convinced that my program's textfiles were still intact and that only the directory was messed up.

Now to rebuild the directory. First I needed to discover the layout of the directory. Pascal is not DOS and the Pascal reference manuals are not as complete as the DOS manual either. So, scrounging through my old magazines, I turned up an article in CALL APPLE from March/April, 1981, that showed how the directory is formatted on the disk.

All that is needed is a name and the beginning and ending block number. Pascal numbers are stored in consecutive blocks so there is no track/sector list to locate. But, since Disk ZAP deals in tracks and sectors, the real challenge became to discover how the block numbers are mapped onto the track/sectors. The results of my sleuthing are shown in the following table.

BLOCK #	FIRST TRACK/SECTOR	SECOND TRACK/SECTOR
x0	y/0	y/E
x1	y/D	y/C
x2	y/B	y/A
x3	y/9	y/8
x4	y/7	y/6
x5	y/5	y/4
x6	y/3	y/2
x7	y/1	y/F
x8	z/0	z/E
x9	z/D	z/C
xA	z/B	z/A
xB	z/9	z/8
xC	z/7	z/6
xD	z/5	z/4
xE	z/3	z/2
xF	z/1	z/F

$$\text{Where } y = 2 * x \text{ and } z = 2 * x + 1$$

It turns out that this block number to track/sector mapping is rather twisted. Remember that it takes two sectors for one block.

To convert from block number to track/sector you must think in hex, or at least convert. For instance, to find block number \$53 on the disk, find X3 in the first column. Then X is \$5 in our case. Now double X to get Y, $Y = 2 * X = 2 * \$5 = \A . Finally, the next two columns give the track/sector pair, Y/9 and Y/8. In our example $Y = \$A$, so sectors 9 and 8 on track \$A are the desired locations.

As another example, let's locate block \$3C. First, locate XC in the first column. Using the formula, $X = 2 * 3 + 1 = 7$, the block is found on sectors 7 and 6 of track 7.

To go the other way, you must decide if the track is even or odd. If the track is even, use the top half of the chart; if odd, use the bottom half.

For an example of this, let's find the block corresponding to track/sector \$0C/\$0F. First \$0C is an even number, so use the top half of the table. Next $X = \$0C/2 = \6 . Locating Y/F in the top half and moving over to the first column shows that track/sector \$0C/\$0F is the second half of block number \$67.

There is just one more thing to be remembered. When you find the start of your actual text on the disk, you need to back up 2 blocks to leave room for the header which is at the start of all text files. For more information see the Apple Pascal Reference Manual 3.2.1. The Format of Text Files.

Now to rebuild the directory. First make a backup of your disk. I use COPYA from the DOS System Master for this. Of course, if I would have backed up in the very beginning I would not have had to go through all of this, but that's hindsight. Any direction modification of sectors is considered dangerous so we need to back up now for sure.

The Pascal disk directory is divided into entries that are 26 (decimal) bytes long. The first 26 bytes are for the disk volume name.



Each subsequent group of 26 bytes is for an individual file. The directory starts on track \$0, sector \$B and extends downward. There is room for up to 77 file names.

THE FIRST 26 BYTES

BYTE *

- 1,0 START OF DIRECTORY
- 3,2 END OF DIRECTORY BLOCKNUMBER
- 5,4 ALWAYS ZERO
- 6 LENGTH OF DISK VOLUME NAME
- 7-13 DISK VOLUME NAME STRING
- 15,14 NUMBER OF BLOCKS ON DISK
- 17,16 ENTRIES IN THE DIRECTORY
- 19,18 ALWAYS ZERO
- 21,20 CURRENT DATE
- 23,22 ALWAYS ZERO
- 25,26 ALWAYS ZERO

INDIVIDUAL FILES

BYTE *

- 1,0 BLOCK START NUMBER
- 3,2 BLOCK END NUMBER
- 5,4 FILE TYPE:
2=CODE, 3=TEXT, 5=DATA
- 6 LENGTH OF FILE NAME
- 7-21 FILENAME STRING
- 23,22 NUMBER OF BYTES IN LAST BLOCK
- 25,24 FILE DATE

As an example, I have included a sector dump of my Apple I diskette. Notice, as usual, the low order byte is first. Also the ending block number is really the beginning of the next file or one block past the actual end of the text file.

Let's look at the initial 26 bytes first. The start of the directory is 0000, or block

zero. The end of the directory is 0600, or block six. Next we find two bytes of filler, 00 00. Now 06 is the length of the volume name. The volume name itself appears as shown below.

41 50 50 4C 45 31
A P P L E I

Next comes three more filler bytes 00 18 01, followed by a 0A00 which shows that there are 10 file entries in my current directory. Two more bytes of filler, 00 00 are followed by the current date in Pascal format, 2C A5. The next four bytes are again filler.

The first individual file in SYSTEM.APPLE is broken down like this: The starting block number is six, 06 00. The ending block number is thirty-eight or hex \$26, 26 00. The file type is 05 00 which indicates a data file. The length of the data file is twelve, \$0C. The file name string is:

53 59 53 54 45 4D 2E 41 50 50 4C 45
S Y S T E M . A P P L E

There are a remaining three bytes of filler 00 24 67. The maximum length for a file name is fifteen bytes. The number of bytes in the last block is 00 02, which says all the bytes in the last block are used. Remember 00 02 is low order byte first, so it stands for 2 * 256 = 512 bytes which is a full block. This was the case for all the text files I have dealt with. Finally, there are two bytes for the file date, 9B A0.

These examples will serve as an entrance into the understanding of how Pascal formats information in track/sector blocks. Back up your disks and you will need not to use this information in desperation.



CONROY ASSOCIATES
Education & Business Consultants

Call 612/888 9447

Just Received !!

New Release of WORDHANDLER and LISTHANDLER
Designed to work on Apple II + , //e and clones.
Lots of new features.

SPECIAL INTRODUCTORY PRICE \$ 190 for both (\$100 off list)

Wordhandler II	\$ 140	(List \$ 200)
Listhandler	\$ 70	(List \$ 90)



The Time-Share Pencil

A Fantasy for Our Times
by Jack Turner

After learning recently of a classroom in India that has only one pencil for 30 students, I considered the parallels implied for microcomputers in American schools. To provide a new perspective on the problems and prospects of accomodating to computer use in education, I have invented a fantasy.

Johan Pestalozzi(1746-1827), a forward looking Swiss educator, has just received a response from the School Committee regarding his request for classroom sets of pencils. Although pencils as we know them had been developed in 1565, these tools did not become commonly available until about 1800 - technological advances were rapidly lowering price per unit.

To: Johann Pestalozzi, Headmaster

From: School Finance Committee

Re: Your request for Student Pencils

We must regretfully respond that your request is denied. After careful consideration of your unprecedented proposal to provide each student with a pencil, the committee has elected to purchase only one such unit for use in your classroom. The rationale for the Committee decision is enumerated below, followed by queries to which you must respond (in triplicate) after field-testing the pencil.

- A. Pencils are fragile and break down easily owing to primitive technology.
- B. Acquisition of pencils in quantity leads inevitably to requests for other expensive peripherals such as sharpeners, erasers, tablets, etc.
- C. We cannot justify the expenditures for these systems to patrons whose education was perceived as adequate without any such paraphernalia.
- D. The Committee expressed doubt that students would use the requested pencils for activities more substantial then doodling or tic-tac-toe.
- E. We strongly suggest you reconsider your proposal to allow students to use pencils to work ciphers and related mathematics. Apart from the loss of requisite mental rigor implied by your position, what will happen if students become dependent on pencils to solve problems but cannot locate such in time of need?

- F. Appropriate usage of pencils presumes teachers who know how to incorporate them into classroom activities. Yet very few teachers have such skills; thus pencils would probably be relegated to storerooms.

Within two weeks of the close of the annual school session the Committee would like to receive your answers to the following questions:

- A. Does the requested apparatus have applications in schooling beyond the working of ciphers?
- B. Do you recommend the creation of a new discipline of pencil literacy? If so, which of the present legitimate disciplines should be dropped in order to accommodate the new course?
- C. Is this "new tool" (as described by you) especially useful for specific sub-groups, e.g. the particularly dull or perhaps the brightest?
- D. Do students from rich families having pencils in the home distance themselves in achievement from those who do not?

In closing, the Committee feels compelled to remind you that Aristotle managed to become educated quite satisfactorily without benefit of a pencil.

From a speech by Lola May, MCSM, Detroit
1983

Tips

by Al Peterman

Shift-key Mod

If you want the shift key mod, but also like to use the game I/O port for paddles or joysticks, there is a better place to connect the wire from the keyboard. The chip directly in front of the game socket (H14) is a 74LS251. Pin 1, which is the front right pin of H14, is connected internally to pin 4 of the game I/O socket. You can connect to this pin 1 either with a mini clip such as Radio Shack 270-370 or by using a thin wire inserted directly into the socket with the chip re-installed on top of the wire.

DISKCOVER

The Leader

With Over

400 TITLES

For Your Apple* Computer

Remember Mini-'App-'les Club
Members receive a **10% Discount**
off of our everyday low prices!

*Apple is a registered trademark of Apple Computer.

DISKCOVER SOFTWARE, INC.

3619 West 50th Street, Edina, Minnesota 55410
(2 Blocks East of 50th and France)

HOURS:

Mon. & Thurs. 10 a.m. to 8 p.m.
Tues., Wed., Fri., Sat. 10 a.m. to 6 p.m. • Closed Sunday
(612) 929-0551

-27-

SOFTWARE™



Where Did My Other Basic Go?

by Chuck Thomka

From South Bay Apples Computer Club News; July/Aug. '81

If you have a 16K RAM board installed in your Apple, as I do, then you also have noticed from time to time, usually when booting a disk, a message displayed that said it was loading BASIC into the RAM Card. If you have a regular Apple II the type of BASIC it will be loading is Applesoft, also known as Floating Point or Extended BASIC. On the other hand if you have the Apple II Plus the BASIC being loaded will be Integer, also known as Game BASIC.

This is a very nice feeling to know that you have the versatility of a multi-language Apple. However, have you ever been baffled, later, by the message: "LANGUAGE NOT AVAILABLE", when you knew that earlier the language was there! Which brings up the question, "Where did my other BASIC go?"

Well, it's because of a purposely intended function of booting 3.3 DOS. At one point, during the Boot process, the RAM Card is enabled and address location \$E000 is written with \$00 (that's zero in hexadecimal). The RAM card is then disabled and the Apple returns to the "normal" (motherboard firmware) BASIC. Later, after the booting process is over, if DOS attempts to retrieve a program that requires a BASIC other than the "normal BASIC" (that which is present on the Language Card, then the following analysis is made by DOS:-

- If the data in \$E000 is \$20 then the alternate language is Integer BASIC.
- If the data in \$E000 is \$4C then alternate language is Applesoft.
- If the data in \$E000 is \$20 (as booting 3.3 DOS made so); then the language is assumed to be unusable.

Why the Apple Company wanted 3.3 DOS to do this trick (3.2 DOS doesn't) is almost anybody's guess. However, according to the extremely informative book by Don Worth and Pieter Lechner, BENEATH APPLE DOS (page 7-2) which reads "...forcing DOS to reload BASIC for every boot...added for version 3.3 to allow for eventual possibility that a language like PASCAL whose first byte of code just happens to match one of BASIC's would cause strange results in DOS."

Now what can you do about it? Here are three

different answers:

1. Scream and then go through the process of booting another disk with the right HELLO program to reload RAM.
2. You can also restore the location \$E000 so that the other BASIC will be available. Here's how:

- Enter the monitor (Call-151)
- Type C083 Return
- Type C083 Return—these two accesses to location C083 will turn on the RAM Card and 'write enable' it.
- Type E000:20 Return (or E000:4C Return

If the RAM Card did/does have FP BASIC) — This will reinstall the proper code to RAM card location \$E000.

- Type C081 Return—This will disable the RAM Card and put the Apple's resident firmware language back in control.
- Type 3DOG Return—to get back to BASIC.

Now go back to RUNNING or LOADING that program you were attempting when you got the message "LANGUAGE NOT AVAILABLE."

3. You can modify the present 3.3 DOS in your APPLE to eliminate the problem so that any future INITs from the DOS, now in your Apple, will not cause a rewrite of location \$E000. To do this:

- Enter the monitor (Call-151).
- Type BFD3:EA EA EA Return -- This will put 3 NO OP codes in the offending area, which prior to the modification, should have been 8D 00 E0 (STA #E000).
- Type 3DOG Return—To get back to BASIC. Now any slave disk INITed, using this modification version of DOS, will have a patch to prevent the rewrite at location \$E000, and hence avoid a forced reload of the RAM Card.

NOTE — for 32K Systems use 7FD3 instead of BFD3.

MICROWORLD

LETTER QUALITY PRINTERS

BROTHER DAISYWHEEL (PARALLEL)	756.00
BROTHER DAISYWHEEL (SERIAL)	825.00
BROTHER TRACTOR FEED	125.00
C.I.TOH STARWRITER F10 13", PAR	1159.00
C.I.TOH STARWRITER F10 13", SERIAL	1159.00
C.I.TOH PRINTMASTER 55 CPS, PAR	1475.00
C.I.TOH PRINTMASTER 55 CPS, SERIAL	1475.00
COMEX COM-RITER CR-1 17 CPS, SER	579.00
SMITH-CORONA TP-1 (PARALLEL)	600.00
SMITH-CORONA TP-1 (SERIAL)	600.00
SMITH-CORONA TRACTOR FEED	119.00
TRANSTAR 140 40 CPS	1240.00
TRANSTAR BIDIRECTIONAL TRACTOR	179.00
TRANSTAR 2K BUFFER OPTION	35.00
SANYO PR 5500 15 CPS, PARALLEL	625.00
XEROX 630 PRINTER, 40 CPS, SER	2200.00
XEROX 620 PRINTER, 20 CPS, SER	1275.00
XEROX RUTISHAUSER TRACTOR	245.00

DOT-MATRIX PRINTERS

EPSON FX-80 10" 160 CPS, PARALLEL	525.00
EPSON MX-100 13", 80 CPS, PARALLEL	610.00
C.I.TOH PROWRITER 10", 120 CPS, PAR	335.00
C.I.TOH PROWRITER 10", 120 CPS, SER	529.00
C.I.TOH PROWRITER II 13", PARALLEL	635.00
C.I.TOH PROWRITER II 13", SERIAL	685.00
NEC PC-8023 PRINTER	435.00
OKIDATA MICROLINE 82A 10", SER/PAR	389.00
OKIDATA MICROLINE 83A 13", 120 CPS	630.00
OKIDATA MICROLINE 84P 13", 200 CPS	1100.00
OKIDATA MICROLINE 84S 13", 200 CPS	1010.00
OKIDATA MICROLINE 92 10", 160 CPS	485.00
OKIDATA MICROLINE 93 13", 160 CPS	839.00
FORMS TRACTOR FOR 80 & 82A	55.00

MODEMS

RS-232C	
ANCHOR SIGNALMAN MARK 1	73.00
HAYES 300 BAUD SMARTMODEM	192.00
HAYES 300/1200 BAUD SMARTMODEM	470.00
NOVATION 103 SMART-CAT	160.00
NOVATION 103/212 SMART-CAT	409.00
NOVATION J-CAT 300 BAUD, DIRECT	99.00

APPLE II

HAYES MICROMODEM II W/TERM. PROG	263.00
SSM TRANSPAK 1 300 BAUD MODEM-CARD, TRANSEND 1	275.00
SSM TRANSPAK 2 300 BAUD MODEM-CARD, TRANSEND 2	305.00
SSM TRANSPAK 2-1200 BAUD MODEM-CARD, TRANSEND 2	735.00
SSM TRANSPAK 3 300 BAUD MODEM-CARD, TRANSEND 3	389.00
SSM TRANSPAK 3-1200 BAUD MODEM-CARD, TRANSEND 3	810.00

MONITORS

AMDEK COLOR I 13" COMPOSITE COLOR	269.00
AMDEK COLOR II 13", HI-RES RGB	589.00
AMDEK COLOR III 13", MED-RES RGB	349.00
AMDEK COLOR IV 13", HI-RES RGB	985.00
AMDEK 16 COLOR RGB IBM INTERFACE	10.00
AMDEK APPLE II RGB INTERFACE	139.00
AMDEK VIDEO 300G 12", GREEN, 18MHz	139.00
AMDEK VIDEO 300A 12", AMBER, 18MHz	139.00
AMDEK VIDEO 310G IBM COMPATIBLE, 12", GREEN	157.00
AMDEK VIDEO 310A IBM COMPATIBLE, 12", AMBER	153.00
COMEX CR-5400-G 9", GREEN, 20MHz	129.00
COMEX CR-5400-Y 9", YELLOW, 20MHz	132.00
COMEX CR-5400-A 9", AMBER, 20MHz	136.00
COMEX CR-5500 12" GREEN	85.00
COMEX CR-5600-G 12", GREEN, 20MHz	143.00
COMEX CR-5600-Y 12", YELLOW, 20MHz	147.00
COMEX CR-5600-A 12", AMBER, 20MHz	153.00
COMEX CR-6500 COMPOSITE COLOR	295.00
COMEX CR-6600 13", RGB, 380 x 240	399.00
NEC JB-1201 12", GREEN, 20MHz	147.00
NEC JB-1260 12", GREEN, ECOM, 15MHz	100.00
NEC JB-1212 12", COLOR, COMPOSITE	265.00

USI PI-1 9", GREEN	105.00
USI PI-2 9", AMBER	125.00
USI PI-3 12", GREEN	130.00
USI PI-4 12", AMBER	136.00
TAXAN VISION I 12", MED-RES RGB	285.00
TAXAN VISION III 12", HI-RES RGB	495.00
TAXAN KG-12N 12", GREEN, 18MHz	105.00
TAXAN 12" AMBER MONITOR	115.00
TAXAN APPLE II RGB INTERFACE	79.00
TAXAN APPLE III RGB CABLE	19.00
TAXAN IBM RGB CABLE	19.00
ZENITH ZVM-121 12", GREEN	85.00

DISK DRIVES

APPLE II	
AXLON RAMDISK 320K SOLID STATE	995.00
MICROSCI A2 DISK DRIVE	225.00
MICROSCI A40 DISK DRIVE	256.00
MICROSCI A70 DISK DRIVE	332.00
MICROSCI C2 CONTROLLER CARD	69.00
MICROSCI C47 CONTROLLER CARD	69.00
RANA ELITE 1 PLUG COMPATIBLE, 163K	258.00
RANA ELITE 2 40 TRACK, 326K	399.00
RANA CONTROLLER CARD	96.00
RANA ELITE 3 80 TRACK, 652K	525.00

APPLE III

MICROSCI A3 DISK DRIVE	274.00
MICROSCI A73 DISK DRIVE	385.00
MICROSCI A143 DISK DRIVE	479.00

ATARI

RANA 1600 SLIMLINE DRIVE DRIVE	379.00
--------------------------------	--------

MEMORY EXPANSION

APPLE II	
WESPER MICRO SYSTEMS WIZARD 16K	55.00
STB SYSTEMS 16K RAM CARD	105.00
STB SYSTEMS 64K RAM CARD	189.00
STB SYSTEMS 128K RAM CARD	315.00
STB SYSTEMS APPLEWRITER PATCH	29.00
STB SYSTEMS DISK EMULATOR DOS 3.3	29.00
STB SYSTEMS DOS TOOL KIT	39.00
STB SYSTEMS VISICALC 80 EXPAND	69.00
STB SYSTEMS PASCAL EMULATOR	29.00
STB SYSTEMS CP/M EMULATOR	29.00
MICROSOFT 16K RAM CARD	63.00
PROMETHEUS 16K RAM CARD	56.00
MICROTEK 16K RAM CARD	66.00

IBM

MICROSOFT 64K RAM CARD	240.00
MICROSOFT 256K RAM CARD	599.00
STB SUPER RIO (64K)	299.00
STB SUPER RIO (192K)	409.00
STB SUPER RIO (256K)	467.00
STB SUPER RIO PIGGYBACK 64K	207.00
STB SUPER RIO PIGGYBACK 192K	377.00
STB SUPER RIO PIGGYBACK 512K	598.00
STB RAM I/O MULTIFUNCTION 64K	249.00
STB RAM I/O MULTIFUNCTION 192K	361.00
STB RAM I/O MULTIFUNCTION 256K	378.00
STB MEMORY EXPANSION CARD 64K	186.00
STB MEMORY EXPANSION CARD 192K	297.00

PRINTER INTERFACES

APPLE II	
ALS DISPATCHER RS-232 SERIAL CARD	93.00
CCS 7710A RS-232 SERIAL CARD	110.00
ORANGE MICRO GRAPPLER+	115.00
PKASO FOR EPSON	123.00
PKASO FOR PROWRITER/NEC 8023	123.00
PKASO FOR APPLE DMP	123.00
MICROTEK DUMPLING-64 BUFFER	235.00
MOUNTAIN CPS MULTIFUNCTION CARD	126.00
PROMETHEUS VERSACARD	135.00
WESPER WIZARD BPO 16K EPSON	125.00
WESPER WIZARD BPO 16K NEC	125.00
WESPER WIZARD BPO 16K OKIDATA	125.00
WESPER WIZARD BPO 32K EPSON	147.00
WESPER WIZARD BPO 32K NEC	147.00
WESPER WIZARD BPO 32K OKIDATA	147.00
WESPER WIZARD IPI EPSON	59.00
WESPER WIZARD IPI NEC	59.00
WESPER WIZARD IPI OKIDATA	59.00

RS-232C

PRACTICAL PERIPHERALS IN-LINE	
MICROBUFFER SERIAL 32K	209.00
MICROBUFFER PARALLEL 32K	209.00
MICROBUFFER SERIAL 64K	249.00
MICROBUFFER PARALLEL 64K	249.00

CO-PROCESSOR CARDS

APPLE II	
ALS CP/M PLUS CARD	260.00
MICROSOFT PREMIUM SYSTEM	420.00
MICROSOFT CP/M SOFTCARD	219.00
ALS Z-CARD	119.00

VIDEO ACCESSORIES

APPLE II	
VIDEX VIDEOTERM 80 COLUMN VIDEO	206.00
VIDEX VIDEOTERM W/SOFT SWITCH	245.00

WORD PROCESSING

APPLE II	
HAYDEN PII WRITER	95.00
IUS EASYWRITER 40-COL	60.00
IUS EASYWRITER PRO	105.00
MICRO PRO WORDSTAR	279.00
ON-LINE SCREENWRITER II	79.00

IBM

IUS EASY WRITER II	205.00
IUS EASY SPELLER	79.00
MICRO PRO WORDSTAR	272.00
MICRO PRO MAILMERGE	145.00
MICRO PRO SPELLSTAR	145.00
MICRO PRO WORDSTAR/SPELLSTAR	369.00
MICRO PRO WORDSTAR/MAILMERGE	340.00
MICRO PRO INFOSTAR	275.00
MICRO PRO REPORTSTAR	205.00
SORCIM SUPERWRITER	169.00
SORCIM SPELLGUARD	125.00
VISICORP VISIWORD	257.00
VISICORP VISISPELL	155.00

DATA BASE

APPLE II	
ASHTON-TATE dBASE II	395.00
FOX & GELLER QUICK CODE	175.00
FOX & GELLER D GRAPH	175.00
FOX & GELLER D UTIL	59.00
APPLIED SOFTWARE VERSAFORM	225.00
STONEWARE DB MASTER	140.00
SOFTWARE PUBLISHING PFS: FILE	75.00
SOFTWARE PUBLISHING PFS: REPORT	58.00
SOFTWARE-PUBLISHING PFS: GRAPH	75.00
VISICORP VISIFILE II	159.00
VISICORP VISIDEX II	159.00

APPLE IIE

SOFTWARE PUBLISHING PFS: FILE	75.00
SOFTWARE PUBLISHING PFS: REPORT	75.00
SOFTWARE PUBLISHING PFS: GRAPH	75.00

APPLE III

APPLIED SOFTWARE VERSAFORM	287.00
ASHTON-TATE dBASE II	420.00
SOFTWARE PUBLISHING PFS: FILE	105.00
SOFTWARE PUBLISHING PFS: REPORT	75.00
SOFTWARE PUBLISHING PFS: GRAPH	105.00

IBM

APPLIED SOFTWARE VERSAFORM	225.00
ASHTON-TATE dBASE II (CP/M-86)	395.00
ASHTON-TATE dBASE II (MS DOS)	395.00
INFORMATION UNLIMITED EASY FILER	232.00
SOFTWARE PUBLISHING PFS: FILE	82.00
SOFTWARE PUBLISHING PFS: REPORT	73.00
VISICORP VISIFILE	189.00
VISICORP VISIDEX	159.00

ACCOUNTING

APPLE	
CONTINENTAL GL. AP, AR, PAY (each)	145.00

CONTINENTAL PROPERTY	
MANAGEMENT	289.00
PEACHTREE GL. AP, AR, INV. PAY (each)	211.00
PEACHTREE PEACHPAK (GL,AR,AP)	315.00

IBM

IUS GL. AP, AR, INV. PAY (each)	345.00
IUS ORDER ENTRY	345.00
IUS FINANCIAL MANAGEMENT SERIES	865.00
PEACHTREE GL. AP, AR (each)	316.00

SPREADSHEETS

APPLE II	
VISICORP VISICALC II	159.00
MICROSOFT MULTIPLAN (DOS 3.3)	160.00
MICROSOFT MULTIPLAN (Z-80 CP/M)	160.00
PEACHTREE PEACHCALC	199.00
SORCIM SUPERCALC	169.00

APPLE III

VISICORP VISICALC	159.00
VISICORP ADVANCED VISICALC	252.00

IBM

IUS EASY PLANNER	115.00
MICROSOFT MULTIPLAN (MS DOS)	160.00
SORCIM SUPERCALC	169.00
VISICORP 256K VISICALC	159.00
VISICORP ADVANCED VISICALC	275.00

BUSINESS

APPLE II

ASHTON-TATE BOTTOMLINE	
STRATEGIST	235.00
CONTINENTAL HOME ACCOUNTANT	45.00
CONTINENTAL 1st CLASS MAIL	45.00
VISICORP VISIPILOT II	129.00
VISICORP VISITREND/PLOT II	189.00
VISICORP DESKTOP PLAN II	159.00
VISICORP VISISCHEDULE II	189.00
VISICORP VISILINK II	175.00

APPLE III

VISICORP DESKTOP PLAN	189.00
VISICORP VISISCHEDULE	189.00

IBM

ASHTON-TATE BOTTOMLINE	
STRATEGIST	235.00
CONTINENTAL PROPERTY	
MANAGEMENT	286.00
CONTINENTAL HOME ACCOUNTANT	
PLUS	89.00
CONTINENTAL FIRST CLASS MAIL	75.00
IUS EASY PLANNER	145.00
LOTUS 1-2-3	315.00
VISICORP VISIPILOT/VISITREND	189.00
VISICORP DESKTOP PLAN	175.00
VISICORP VISISCHEDULE	206.00

COMMUNICATION

APPLE II

SSM TRANSEND 1	57.00
SSM TRANSEND 2	95.00
VISICORP VISITERM	69.00

SERVICE - SELECTION

SATISFACTION SAVINGS



P.O. Box 7376
Alexandria, VA 22307

How To Order: For prompt and courteous shipment, send Money Order, Certified Check, Cashier's Check, Mastercard or Visa. Do not send cash. Personal and business checks must clear our bank before processing. No credit card is charged or check cashed until actual shipment is made to you. Shipping, Handling, and Insurance charge is 2% of total order with a \$3.00 minimum. We ship to continental U.S. (shipping to all other nations is at cost FOB Washington, D.C.). Sorry, no C.O.D.'s. Virginia state residents please add 4% of total order for sales tax. Credit card orders please add 3% to final total. All merchandise shipped brand name factory fresh, with manufacturer's warranty. Allow 3-4 weeks for delivery. Most items in stock ready for immediate delivery. Multiple items are sometimes shipped separately. Mail order only. No other discounts. All sales final. All items subject to change without notice. Be sure to accurately enclose the following information: your name, address, city, state, zip code, telephone number (optional), tax ID number (if applicable), purchase order number (if applicable), method of payment, and the names and quantities of the items you wish to order. Visa and Mastercard users will need to give the following information: card number, expiration date, and cardholder's name. **Satisfaction Guaranteed:** Our prices are the lowest available. But if indeed you do buy from us and within 30 days you see another store selling the same product for less money, we will issue you a MICROWORLD credit for that full difference to use towards future MICROWORLD purchases. **Money Back Guarantee:** We want you to be pleased with every product you purchase from MICROWORLD. If for any reason you are not satisfied, please return your purchase to MICROWORLD in its original carton and in new condition within 30 days for a prompt and courteous refund. Your satisfaction is assured by our 30 day no obligation moneyback guarantee on all the products we sell.

Cheap Tricks - Part 1

How to find an assembler on your System Master Disk
For Beginning Programmers.

by Mark Hull

571-1781

If you are a budding assembly-language enthusiast (and if you aren't, you should be), this series of articles will provide you with some basic tools to use in exploring your Apple at the nuts-and-bolts level. In these columns, I will try to provide some practical and educational programs to help beginning Assembly Language programmers to better understand their Apples' inner workings. Many of the routines and tricks presented here may be familiar to old timers, but even they may find something useful, or (better yet) provide me with more "cheap tricks" to pass on to all of you.

I should warn you beforehand that an elementary knowledge of 6502 assembly language will be very helpful in interpreting some of the jargon, and an understanding of the monitor commands found in your Apple Reference Manual is going to be essential. I would direct those who want to learn more about 6502 assemblers to John E. Hansen's article "Assembly Language References" in the February issue of the Mini'app'les newsletter. One last item on the agenda, then we get to the good stuff: please let me know of any nifty tips, terrific ideas, misc. stuff from your private stock, or (heaven forbid) errors, so that I can pass them along to everyone else, and we can all benefit.

Now, for today's special — since we'll be doing a lot of work with monitor routines and machine code in future installments, the first thing we need to do is to get you a 6502 assembler. Congratulations! You already have one! It's the Mini-assembler that your Apple Reference Manual talks about; although it isn't LISA or the Toolkit assembler, the price is attractive....

As you probably know, when you purchased Apple DOS, you also received a System Master diskette with all kinds of programs that you couldn't run because you didn't have a plain-vanilla (p-v) Apple (i.e., an Apple II without the 'Plus'), and you couldn't afford a language card. The INTBASIC program included on that very diskette is actually a software version of the ROM firmware that comes with the p-v Apple. If you do have an add-on 16K memory card of some kind, when you boot the System Master diskette this software is loaded into your card, allowing you to switch back and forth from Integer Basic to Applesoft and back again. Lo and behold, also in the INTBASIC program is buried a copy of the Apple

Mini-assembler. We're just going to dig it out and alter it slightly, so that you can use it without a language card and without an "old monitor" ROM. It isn't the most powerful assembler around, but it beats looking up the hex values of instructions on a systems card. Even if you do own a more sophisticated assembler, the Mini-assembler comes in very handy for small routines and patches.

Step 1: Boot DOS from the System Master diskette, then type:
BLOAD INTBASIC,A\$2000

Step 2: Save the original version of the Mini-assembler to another diskette (if you have one drive, change diskettes) and type: BSAVE ASM,A\$4500,L\$200

Step 3: Enter the monitor by typing CALL -151, then, when the asterisk appears, type 800:0. Type 801<800.95FEM to move zeroes to the range of memory from \$800 to the beginning of DOS (in a 48K machine). This starts us with a clean slate, and allows us to see more clearly where everything is located in memory.

Step 4: Now type: BLOAD ASM,A\$5400
This step reloads the portion of INTBASIC we saved in step 2 which contains the Mini-assembler. It will be helpful to list the program on your screen using the monitor hhhhL command (hhhh=hex address, in this case 5400).

In the next step, we're going to change all the absolute references to pages \$F5 and \$F6 to point to our new location for the program in pages \$54 and \$55. If you don't understand this explanation, a "page" refers to 256 consecutive memory addresses. Since 256 in decimal notation is equivalent to 100 in hex notation (written \$100 in 6502 convention), saying "page \$54" is an easy way of saying "hex locations \$5400 through \$54FF". Most of the code we will be changing sticks out like a sore thumb in the list you just did; they are the "F5" and "F6" bytes you may have noticed in third column. If you didn't, don't worry; it should all become clearer after the next step.



Step 5: You're in the monitor, right? Good...now type the following stuff, exactly as it appears below:

5437:54
545B:54
54BF:55
54DD:55
54E7:55
5533:54
5568:54

What you just did is change all the places where the program referred to itself at its old addresses to the addresses in its new home at \$5400. If you typed the above lines correctly, you now have a functioning Mini-assembler. Time for Step 6...

Step 6: Type:
BSAVE MINIASSEMBLER,A\$5400,L\$200
This will save your new program. Now lock the file (LOCK MINIASSEMBLER), and it should be safe and sound on your diskette.

Step 7: To run this program, first load it by typing:
BLOAD MINIASSEMBLER
This will put it back in memory at

\$5400-\$55FF. Now type 5566G if you are in the monitor, or CALL 21862 if you are in Basic, and it should come back with a "!" prompt, which is the Mini-assembler's cheery way of telling you it wants you to type something. What do you type? I hereby refer you to the section on the Mini-assembler in your Apple Reference Manual, and hope you have fun. One word of caution: if you start assembling programs into the area between \$5400 and \$55FF, you will bomb your Mini-assembler, and strange things will happen. If you do this, just reload the program and begin again, being more cautious this time!

At last, I am going to confess that this initial cheap trick is not my own creation; instead, the credit goes to Rushika Fernandopulle for coming up with the method, and to Chuck Carpenter for printing it in his Apple Cart column in the October '81 issue of Creative Computing. I suggest that you read that column if you don't have a disk drive and still want the program; Carpenter gives a listing of it.

Well, that wraps it up.... My next "cheap trick" will be a step/trace program to debug all those machine-code programs you're going to write this month!



APPLE ORCHARD SUBSCRIPTIONS

For IAC Club Members Only

908 GEORGE STREET, SANTA CLARA, CALIFORNIA 95050

9 issues for only \$19.50 (\$29.25 at newsstands) \$17.00 for members of IAC clubs only

Foreign: 9 issues \$36.00 Surface \$29.00 for members of IAC clubs only

Payment enclosed (US funds only)

Start my subscription with issue #

Name Address City State Zip

Name of Club Signature of club officer Valid only with signature

InterBank # 4 digit number above your name on MasterCard VISA

Charge Card #



A Comment on Error Traps

by Nick Fotheringham

From The Apple Barrel, July'82

by way of the IAC Compiler

You have finally gotten all of the bugs out of that special program that has kept you in seclusion for the past several weeks. It does exactly what you want it to do, and you are ready to impress someone with it. You beg your boss to take time from his busy schedule for a session with your Apple, and after ten minutes of routine data entry, your program is nearing its flashy finale. The next question appears: "How many sides on an octogon?" As your boss enters "e..i..g...", you stifle, "Not that key, you dummy, the '8'." Too late...

The Apple has already responded with a "TYPE MISMATCH" message and shut your program.

One purpose of an "error trap" or "error handling routine" is to help prevent such embarrassing situations. Your Apple's BASIC interpreter already has several built-in error traps which were designed to protect the system from your unreasonable requests, such as attempts to divide by zero or to exceed the system's capacity ("STRING TOO LONG", "OVERFLOW", "FORMULA TOO COMPLEX", "OUT OF MEMORY"). Fortunately for many applications, these traps can be avoided by using the ONERR GOTO.....POKE 216,0 commands. ONERR GOTO... disables the system's internal error handling routine and, upon encountering an error, transfers program processing to a statement defined by the GOTO statement, typically a replacement error handling routine of your design.

The POKE 216,0 command reinstates the system's error handling routine.

For many beginning programmers, disabling the system's error handling routine, only to replace it with one that you must design and which uses some of your precious RAM memory seems like lunacy. The major reason for doing so is that most of the errors to which the system reacts need not be fatal to your run. The computer views these errors as fatal because the contexts in which they may occur are so diverse that the only general solution that ensures protection to your computer is to terminate your run. However, within your program the context within which an error may occur can often be much more narrowly defined, and nonfatal solutions may be developed. Some of these solutions are described below.

One of the most common applications for error traps is to guard your program against typing errors during data entry from the keyboard. Most such errors can be resolved without aborting your program by designing the program to receive all input as a string variable, say A\$. Because A\$ will accept input from nearly every key (except RESET) without a TYPE

MISMATCH error, it is preferable to A or A% as an input variable. You may then test the input to see if a RETURN has been entered (A\$=""), to see if a number has been entered (ASC(A\$)>47 AND ASC(A\$)<58). If the desired numerical input has been entered, you may then convert the input to its numerical equivalent (A=VAL(A\$) or A%=INT(VAL(A\$))) and then test to see if this value is within the range that you expected as an answer to your question (A%>0 AND A%<5).

One of the great advantages of owning your own computer system on which you run programs interactively is that you can usually train the system to come back to you for help when it has a complaint instead of just dying. When a "fatal" problem is encountered, such as an attempt to divide by zero, an error trap can be used to print an error message of your choosing and then give you an opportunity to change the denominator to a non-zero number and continue the calculation or to abort that program segment (e.g., return to the menu).

Good programs should never "crash". Even when they fail to complete the task for which they were designed, they should reach a controlled ending which provides a detailed description of what went wrong and an opportunity to fix it before ending. Since most of us write programs with the expectation that others will run them, we should get in the habit of using error traps routinely, and we should insist on such programming style in the commercial software we buy.

DID YOU KNOW?

A different SHIFT-KEY Modification.

by John Schoeppner and Chuck Boody

The SHIFT-KEY modification can be made without connecting a wire to the Game IO port. When the wire is connected to the game connector, it makes it a little awkward to plug in game paddles or joysticks unless you piggy-back a 16 pin socket with the wire soldered to pin 4 on the socket.

Another way is as follows: Just forward of the game connector, in position H14, there is a 74LS251 chip. Pin #1 on this chip is connected directly to pin #4 of the Game IO, the connection you need for the SHIFT-KEY modification. You can connect directly to that pin if you are very careful, or you could insert an additional piggy-backed socket with the SHIFT-KEY modification wire soldered to pin #1.



Minutes - May Board Meeting

Concluded from page 7

President Chase Allen introduced Arthur English, the new Education Coordinator. His job will be to determine the needs of members for classes, and also, find what resources we have to teach these classes. This is not to be confused with the Education SIG, whose members are primarily concerned with the use of computers in education.

A questionnaire will be published and possibly incorporated into the membership application.

It was moved, seconded, and passed that we continue to meet at the Penn Center on alternate months, as long as it is available.

Ron Androff reported that the cost of name tags for board members will be \$15 + \$1.45 each. Moved, seconded, and passed we purchase one for each board member and officer that needs one.

Dan Buchler commented on the situation where a member's spouse is active, but not a member. Motion to include other family members in a membership was ruled out of order. Issue to be taken up at the officers' meeting as By-Laws will need to be amended.

President Chase Allen requested all SIG's and Branches to have a budget by the next Board meeting. Also they should make up a roster of active members, so this can be entered on the Membership Data Base. Ann Bell has developed a coded field so we can sort on any SIG, Branch, Board, etc.

It was suggested that Chuck Theisfeld coordinate a presentation at a future general meeting by each SIG coordinator, giving a review of their SIG.

Jay Warrior, Communications SIG, presented some of his ideas for his SIG - bulletin boards (BB) - radio nets - modems - etc.

A discussion about a club bulletin board covered some uses: to announce meeting changes, give facts about the club, allow members to chat, allow officers to conduct business, etc. It was pointed out that a BB is a lot of work; access needs to be limited.

After considerable discussion it was moved and seconded the club purchase an Apple][and a BB system, to be managed by the Communication SIG, with the approval of the Board. Passed

Moved the club purchase 3 Apple][+'s at a cost of less than \$600 each. Failed.

Moved that the club buy 3 Apple][+'s (one to be used for a BB) new and in warranty, at a cost less than \$2000. Passed.

Moved that insurance be purchased for the Apples, from IAC. Passed.

Scott Ueland was appointed chairman of the committee to purchase insurance.

Dan Buchler talked about a new idea for using the Source for compiling reviews of news letter articles from around the world. There is a need for someone to handle the job. Ken Slingsby accepted the assignment. Moved, the club purchase a Source ID and 50 hours or less connect time for Ken's use with this project. Passed. Pete Gilles will purchase the Source ID.

Moved, the club purchase 4 disk drives 3 cards, 3 monitors, 3 carrying cases, and a Ram card (if enough money) for <\$1500. Amended to include \$300 for 3 carrying cases. Passed.

Moved, the club buy 2 Apple][+'s and one Apple IIe instead of 3 Apples][+'s. Failed.

Meeting was adjourned at 11:00 PM.



Puzzle Answers

by Dan Buchler

In last month's newsletter Ron Androff offered a puzzle and requested the Applesoft solution with the least number of steps.

Here is a solution by

Frank A Yauger

P.O. Box 185, Rhinelander, WI 54501.

```
1 FOR X = 50 TO 100
2 Y= 98 - X
3 IF (Y - (X - Y)) + 2 = X THEN 5
4 NEXT
5 PRINT "HIM—"X"   HER—"Y
```

```
]
```

```
]RUN
```

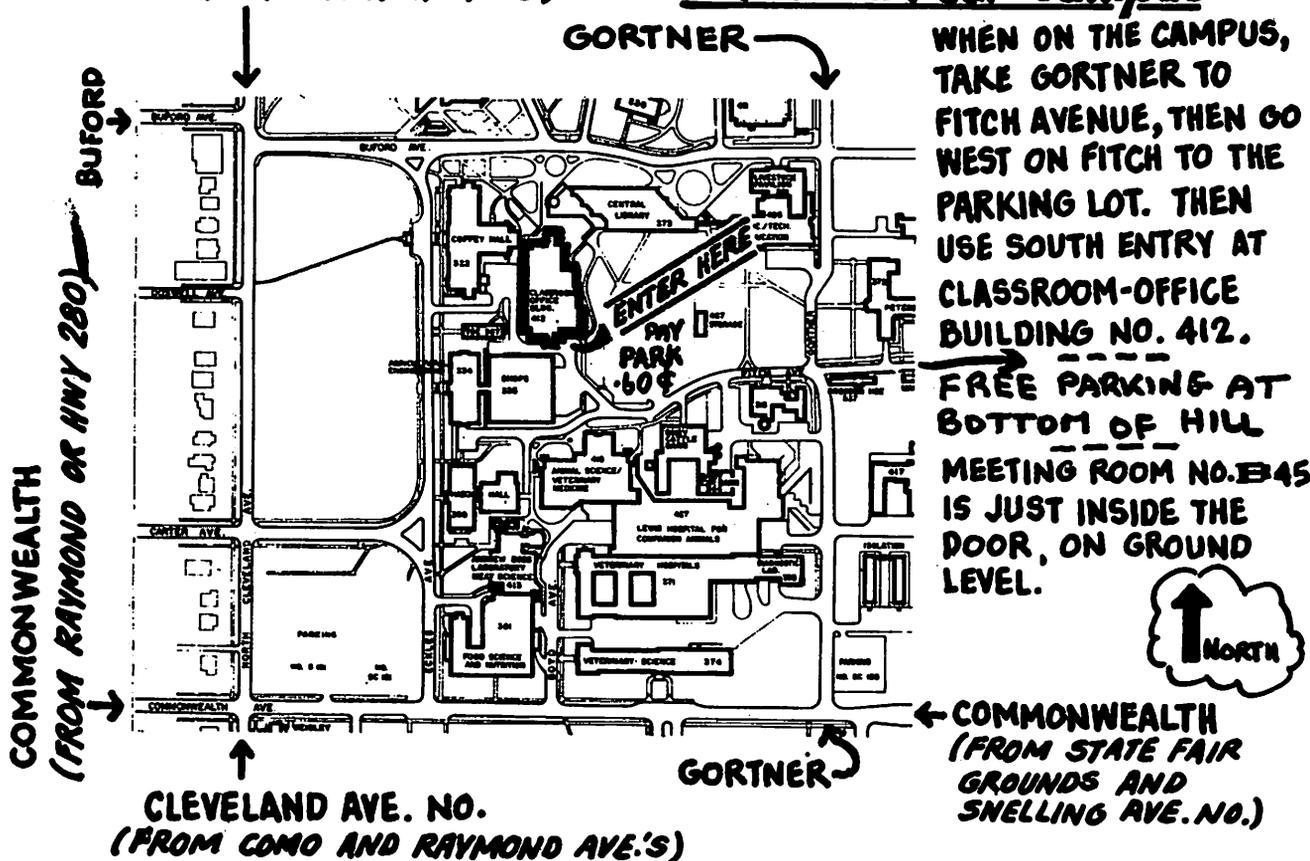
```
HIM—56   HER—42
```

Can anyone better that? Remember, there's a prize!



CLEVELAND AVE. NO.
(FROM LARPENTER OR HWY 36)

U of M St. Paul Campus



WHEN ON THE CAMPUS,
TAKE GORTNER TO
FITZ AVENUE, THEN GO
WEST ON FITZ TO THE
PARKING LOT. THEN
USE SOUTH ENTRY AT
CLASSROOM-OFFICE
BUILDING NO. 412.
FREE PARKING AT
BOTTOM OF HILL
MEETING ROOM NO. 345
IS JUST INSIDE THE
DOOR, ON GROUND
LEVEL.

FROM MIDWAY
PKY TO FREE
LOT ←



These ads are provided free to members for non-commercial use, and are limited to 10 lines. Commercial ads will be charged at 20 cents/word for members or 40 cents/word for non-members. Contact the Advertising coordinator. DEADLINE for ads is the second Friday of the month preceding the month of publication. Ads will be repeated on request only. Also, please notify editor if item is sold. Unless otherwise noted, all items are For Sale.

Buy, trade or sell Apple
Games
Rick 645-3772
Rich 222-7090

Apple II+ Family System
Includes: Monitor III, Disk
II, Language Card, and \$350
worth of Software. 6 months
old, MINT condition. \$1400,
B.O. (Printer also
available)
Ed (after 6 PM) 890-8752

SSDD .3M Scotch Diskettes;
\$21.00 Box 10.
Bob Pfaff 452-2541

For Rent: Micro Computer
Hardware and Software. Call
evenings or weekends.
Sara 473-1977

8" TI Dual Disk Drives;
double density. Power supply
and 10 floppies included.
Chuck 474-9461

CLASSIFIED

Apple IIe, 80 col w/add'l
64K, 2 disk drives and
monitor \$2485. PKASO card
\$125. Z80 (CP/M) card
w/CPM, MBASIC, GBASIC and
BAZIC \$125. Apple Cat modem
w/BSR (X-10) controller
\$300. Control card for 4
add'l drives \$75. System
Saver Fan \$60. Everything
for \$3075.
Steve 474-4356(e)

HP9845A Desktop Computer
with 64K RAM, Thermal
Printer, 2 tape drives, Hi
Res CRT & modem.
Mark Brandon 559-9361(d)

Printer: Infoscrite 1000 dot
matrix. 200 CPS, very quiet,
many features. Comes with
parallel interface and
cables for Apple and 2K
buffer. Best offer!
Mike Manshime 929-0684(d)

SURPLUS ELECTRONICS

Over 25 years of selling electronics we know little about...

Keyboards, power-supplies, control panels, leds, fiber-optics, lens, asst'd
components, wire, cable, test equipment, blowers, motors & more!

AX-MAN SURPLUS

1639 University Avenue • St. Paul, MN 55104 • Phone: 646-8653
(1 Block W. of Snelling)

Hours: Mon.-Fri. 9-6, Sat. 9-5



ATTENTION:



mini'app'les

WE HAVE YOUR PRINTER PAPER

- IN STOCK -

11" X 9½" - 15# or 20# Paper

SMALL QUANTITIES TOO: 250, 500 or 2000 per carton

Also: MANY OTHER SIZES AND TYPES OF PRINTER PAPER (Stop in and see our selection), DATA PROCESSING AND OFFICE SUPPLIES, SNAP-A-PART FORMS AND WEDDING INVITATIONS.

NEW!
In-Stock
Micro-Perf Printer Paper

OPEN MONDAY thru FRIDAY - 8:30 - 5:00

NOTE: New Hours 

For more information call:

(612) 332-4866

House
of Forms

20 NO. 1ST STREET • MINNEAPOLIS, MN 55401

SAVE THIS COUPON!

THIS COUPON ENTITLES MINI'APP'LES MEMBERS TO A

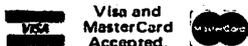
10% DISCOUNT
ON ANY PURCHASE AT



This Discount Will Not Apply
On Sale Merchandise
Or With Other Discounts.

Expires Dec. 31, 1983

20 North First Street
Minneapolis, MN 55401



Visa and
MasterCard
Accepted.

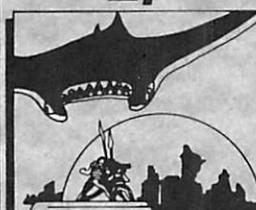
**Bank Street
WRITER**



Brderbund Software

\$49.95
SAVE \$20

A.E.



Brderbund Software

\$24.95
SAVE \$10

CHOPLIFTER!



Brderbund Software

\$24.95
SAVE \$10

EMS #1



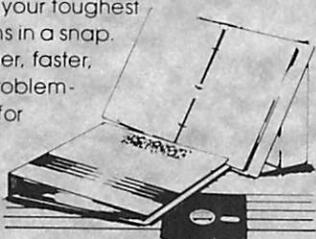
buy a trunkful
& save

10 — \$ 19
40 — \$ 69
100 — \$165

**MICROSOFT \$195
MULTIPLAN**

Fast Answers to Tough Questions

Multiplan is the new, advanced-feature electronic worksheet that turns a microcomputer into an answer machine. Multiplan lets you tackle and solve your toughest business questions in a snap. Multiplan — simpler, faster, more powerful problem-solving software for non-computer people. From Microsoft, of course.



Microsoft and Multiplan are trademarks of Microsoft Corporation.

SAVE \$80
ON EITHER

\$99*

**THE INCREDIBLE
JACK**

*limited quantity

PLUS:

Gemini 10X — \$349,
BASF bulk disks 25 SS, DD
— \$49, and 20-30%
discounts on other
software.



**Continental
Software**

The Home
Accountant

\$49.95
SAVE \$25



yukon computer

(612) 944-1180

p.o. box 37088
minneapolis, mn 55431

Check expiration date on label

This is the only notification which you will receive.
Please pay your dues of \$12 before that date

Mini'app'les
Box 796
Hopkins, Mn. 55343

ADDRESS
CORRECTION
REQUESTED

Bulk Rate
US Postage
PAID
Hopkins, MN
Permit 631