



mini'app'les

apple computer user group newsletter

VOLUME VII No 1

JANUARY 1984

CALENDAR

CALENDAR

CALENDAR

WHICH	WHEN	WHERE	WHAT
St. Paul Branch - Note 3	Tue Jan 3 7pm-10pm	Mahtomedi Fire House Hallam & Stillwater.	Common Apple //Franklin Failures and Fixes
Pascal Note 1	Wed Jan 4 7:30pm	Minnesota Federal 9th Ave S Hopkins	Regular Regular Pascal Special Interest Group Meeting.
Dakota County Branch Note 7	Tue Jan 10 7pm-10pm	St. John Neumann Church 4030 Pilot Knob Rd, Eagan	Customized Hospital Pharmacy Software by Mike & Ann Jones
Medical SIG Note 13	Wed Jan 11 7.00pm	Health Associates Ctr. 2221 University SE, Rm 115	Dr Lynda Ellis Medical Education
Board Meeting Note 2	Wed Jan 11 7:30 pm	Norwest Bank S 1st St., Hopkins	General club business. Meeting is open to all members.
Business Note 10	Thu Jan 12 7:00pm	Minnesota Sch of Bus's 11 S 5th, Mpls	Beginners' Seminar
REGULAR MINI'APP'LES Note 2	WEDNESDAY Jan 18th Prgm-7:30pm	UNIVERSITY MINNESOTA ST. PAUL Room B45 Bldg 412	Business SIG presents Leighton Siegel on MiniScrip
Map next month Educational SIG	SIGS-8:30pm+ Wed Jan 18	Near State Fair Ground After Regular Mtg.	Note 12- MECC software demos.
Investment SIG Note 4	Thur Jan 19 7-9:30pm	Henn Cty Lib at Southdale 7001 York Ave S.	Demo of Cyber-scan by Harold Hoffman (author)
Apple Computer CP/M SIG Note 5	Tue Jan 24, Wed Jan 25 7:00pm	Stockholders' Mtg Softwaire Centre Southtown	MacIntosh Announcement
Minnetonka Branch	Wed Jan 25 7:30pm	Glén Lake Community Ctr 14300 Excelsior Blvd	Note 8
Pascal Note 1	Wed Feb 1 7:30pm	Minnesota Federal 9th Ave S Hopkins	Regular Pascal Special Interest Group Meeting.
St. Paul Branch - Note 3	Tue Feb 7 7pm-10pm	Mahtomedi Fire House Hallam & Stillwater.	VisCalc Advanced Version for the //e
Dakota County Branch	Tue Feb 7 7pm-10pm	St. John Neumann Church 4030 Pilot Knob Rd, Eagan	Note 7
Exec Meeting	Thu Feb 8	Hugh Kurtzman 11622 Live Oak Dr.	
Business Note 10	Thu Feb 9 7:00pm	Minnesota Sch of Bus's 11 S 5th, Mpls	
REGULAR MINI'APP'LES Note 2	WEDNESDAY Feburary 15th Prgm-7:30pm	NW College of Chiropractic (old PENN CENTER) 84th & Penn	MacIntosh night
Map inside	SIGS-8:00pm+	Bloomington	
Investment SIG	Wed Feb 16	Henn Cty Lib at Southdale	To be announced

Notes:

(See page 2 for telephone numbers)

- | | | | | |
|--------------------|--------------------|------------------|----------------------|--------------------|
| 1. John Schoeppner | 4. Eric Holterman | 7. Bob Pfaff | 10. Subir Chatterjee | 13. Stewart Haight |
| 2. Chuck Thiesfeld | 5. W. Scott Ueland | 8. Martin Thames | 11. Bill DeCoursey | 14. Steve George |
| 3. Fred Woodward | 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 15718 Hayes Trail, Apple Valley, MN 55124	431-7278
Past President	Ron Androff 1725 Crest Ridge Lane, Eagan, MN 55122	452-5230
Vice President	Chuck Thiesfeld 8416 Xerxes Avenue S., Bloomington, MN 55431	831-0009
Treasurer	John L. Hansen 38 Birnamwood Drive, Burnsville, MN 55337	890-3769
Secretary	Hugh Kurtzman 11622 Live Oak Dr., Minnetonka, MN 55343	544-7303

BOARD MEMBERS

Beginners' Consultant	S.K. Johnson	869-3447
Blank Disk Bulk Purchases Co'tor	Peter Gilles	475-3916
Board members at large	Steve George	935-5775
Consumables Co'tor	Jo Hornung	922-7665
DOM Editor	Ken Slingsby	507/263-3715
Education Co'tor	Al Peterman	721-3295
Membership Co'tor	Arthur English	824-4131
Parliamentarian	Ann Bell	544-4505
Publications Co'tor	Larry Larson	788-0728
Publicity Co'tor	Daniel B. Buchler	890-5051
Software Coordinator	A. Michael Young	884-2841
Spcl Int. - Apple ///	Chuck Boody	933-5290
Spcl Int. - Business	Joe Horne	941-3411
Spcl Int. - Communic'n	Subir Chatterjee	330-7347
Spcl Int. - Education	Jay Warrior	489-8694
Spcl Int. - FORTH	Jane Chatterjee	888-9447
Spcl Int. - Geneology	Mark Abbott	854-8304
Spcl Int. - Handicaps	Bill Decoursey	574-9062
Spcl Int. - Invest'nt	Steve Lyle	894-2991
Spcl Int. - Medical	Eric Holterman	454-5628
Spcl Int. - Pascal	Stewart Haight	644-1838
Spcl Int. - Viscalc	John Schoeppner	455-8613
Spcl Int. - CP/M & Hardware Coordinator	Mike Carlson	929-4120
Tech. Advisers (sftw)	Scott Ueland	623-3749
	Dave Laden	489-8321
	Roger Flint	771-2868
Branch Coordinators:		
Dakota County	Bob Pfaff	452-2541
Minnetonka	Martin Thames	934-3517
St. Paul/Mahtomedi	Fred Woodward	426-4060
	Jim Schenz	429-4931

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: 2200

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. New members and persons renewing after letting membership expire, pay a \$5 administration fee. Members receive a subscription to this newsletter and all club benefits.

DOMs and MSDs 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. MSDs are \$15/disk at meetings or \$17.50/disk by mail. Contact Terry Schoeppner,

Box 241, Inver Grove Heights MN, 55075 (455-8613) Members may have DOMs copied to their own media. Contact Chuck Thiesfeld - details within this newsletter.

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
 ASCII Express
 by Tom Vanderpool.....21
 Binary Files
 by Steve George.....19
 Classified26
 COMPLEAT.BIN Update
 by Steve George.....17
 DOM #28
 by Alan Peterman9
 For Beginners and Softalk Readers
 by Jo Hornung16
 Get Wise
 by Jane Chatterjee.....10
 Increasing Disk Storage (Part 2)
 by Steve George.....18
 It's That Time Again
 by Steve George.....23
 Map of Meeting Place.....26
 MECC '83
 by Jane Chatterjee.....15
 Mice - (in Apples)
 by Dan Buchler.....13
 Minutes
 by Hugh Kurtzman.....18

ADVERTISERS

City Desk Computer Warehouse.....12
 Creative Computer Peripherals...14
 CSC.....17
 Dayton's Repair.....7
 Diskcover Software.....8
 Hagen Office Equipment.....20
 House of Forms.....27
 Micro Mail.....11
 Personal Business Systems.....4
 Proto PC.....3
 Techport.....23
 Yukon Computer Products.....BC

RFP
 by Ken Slingsby.....25
 Sixth Finger
 by Dick Marchiafava17
 The Spreadsheet Ver. 2.0 Revisited
 by John Hansen.....11
 Volunteer Thanks
 by Steve George.....24
][+ -> //e Update
 by Steve George.....24

APPLE SERVICE AND PARTS

- **REPAIRS:** 9 Yrs. Experience, 24 Hr. Service Avail., Flat Rate, Contracts Too!
- **POWER SWITCH:** Replaced with Pro Mini-Toggle, only \$15.00
- **PARTS:** Every IC Instock; Dealer and Club Inquiries Invited
64K RAMS, 16K + 64K STATIC RAM, Call for Immed. Quote
- **CABLES:** 4 Foot Disk Cables, 3 M Gold Connectors \$15 Ea., 2 for \$25
Printer Cables Too — WE MAKE ANY CABLE

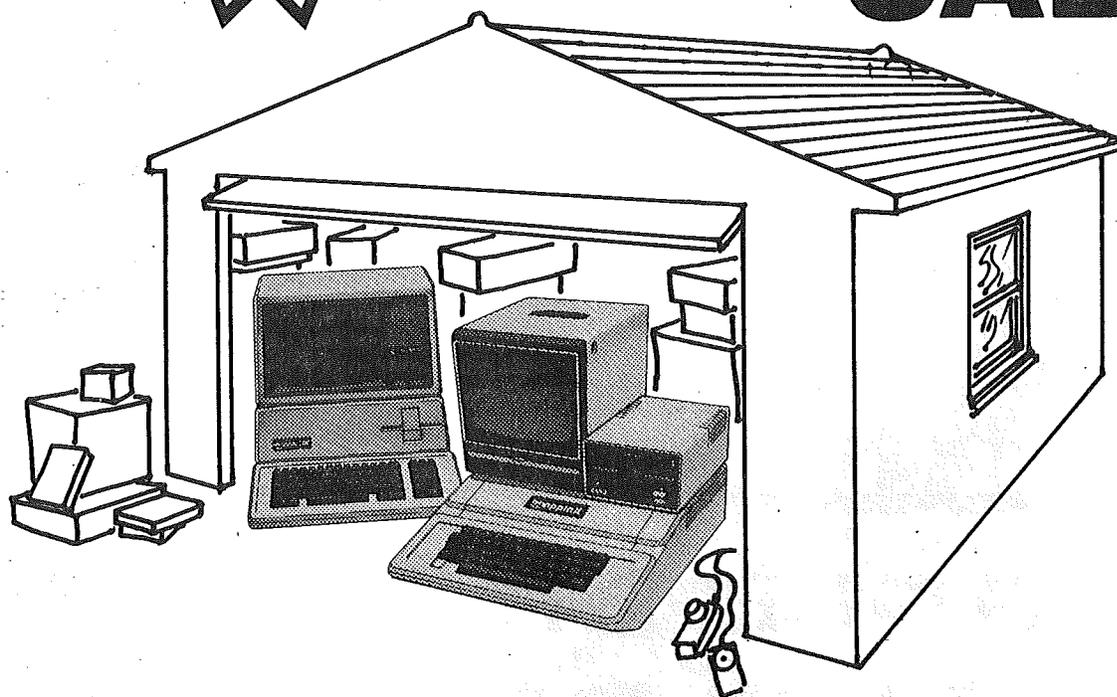
CALL NOW!

PROTO PC inc. 612-644-4660

2439 Franklin Ave., St. Paul, Minnesota 55114

**IN-
STORE**

GARAGE SALE



WHAT DO YOU LOOK FOR AT A GARAGE SALE? **BARGAINS!**
WE REALLY DON'T HAVE A GARAGE, BUT WE DO HAVE THE BARGAINS
ON HARDWARE, SOFTWARE AND ACCESSORIES. WE'RE MOVING
THE OLD STOCK OUT TO MAKE ROOM FOR MORE APPLE PRODUCTS.

TWO DAYS ONLY! FRI-SAT JAN 13 & 14

MINNEAPOLIS
4306 UPTON AVE. SO.
929-4120

igs. PERSONAL
BUSINESS
SYSTEMS, INC.

ST. PAUL
2067 FORD PARKWAY
698-1211

 **apple computer**
Authorized Dealer



Announcements

**Errata to Who's Winning
Nov. Mini'app'les Newsletter**

Your editor committed the unpardonable sin of failing to give credit to Hugh Kurtzman for the magnificent photography accompanying subject article.

Bargain games

One of our members engages in a pastime which some might construe as a business but which in reality is closer to a hobby. He buys closeouts and overstock from computer stores and resells slightly over his cost. The programs are mostly games which, though not now in Softalk's top 30, may have been best sellers at one time or another, even as recently as a year ago. Such is the fluidity of the software market.

I bought Beer Run from him for \$5.00. That's 16% of what one would have paid a year ago! His inventory currently contains over 70 titles mostly priced at \$5 or \$6, one at \$1.90 and one at \$12.00. If you are interested in some bargain software, see the classified ad for 'Software Bargains' elsewhere in this newsletter or call Pat or Gene Kasper at 941-5490.

The Executive committee considers this enterprise as commercial, so you must order beforehand in order to get Eugene to deliver the software to you on a meeting night.

MacIntosh Announcement!

If you read anything, you must know that the 'Mac' (Apple 32?) announcement is near. We really do expect it before the next newsletter goes to press. If this happens, and the Macs arrive in dealers' hands, the February main meeting will feature a presentation on the Mac by none other than Mike Carlson of PBS who many will remember for his wonderful presentation of the //e when it first came out a year ago.

IAC Individual Membership

Our club, along with 400 other Apple user groups worldwide, have been member clubs of the International Apple Corps (IAC), a federation of user groups. The IAC provides most of the software you see on the DOMs, a bulletin board system through which we receive other club's newsletter articles, some documentation and a some commercial grade software.

The IAC are now offering membership for individuals as well as clubs. The cost will be \$30/year which includes a subscription to the "Orchard".

The IAC announced that it will begin supplying materials directly to its new individual members. These materials will be designed to support the new corporate mission adopted by IAC: "to provide education, information and support to users of the Apple technology."

According to Barry Bayer, one of the IAC regional directors, with whom your editor talked at some length on this subject, there is a major benefit that the IAC brings relative to clubs such as Mini'app'les. This benefit is in the area of Special Interest Groups (SIGs). The IAC potential can put together a SIG supported by hundreds or even thousands of individuals rather than ten or twenty.

Board members can offer more information to interested Mini'app'les members.

Business SIG

by Subir Chatterjee

The Business SIG met at the Minnesota School of Business on Nov.10th when Byron Gilman demonstrated Milestone, a Project Management package based on PERT (Program Evaluation & Review Techniques) charts. The program runs on an Apple][+ or //e with 64K and 2 disk drives, and requires Pascal. The program is also available for CP/M systems. Based on Byron's evaluation, the program offers considerably more capability than VisiSchedule or Apple Project Manager (APM). The program can also be used to track the cost of different stages of the projects, or for levelling resources. Our thanks to Byron for a very informative presentation.

Robert Griggs, of Computer Professionals, and Walt Kress, of Hewlett-Packard, then demonstrated an H-P Color Plotter that can be driven by an Apple. The required interface is a serial card. The plotter can be configured for Apple Business Graphics, amongst other programs. It cannot be used for Milestone, because Milestone is designed to drive character based output devices (printers).

Walt & Robert demonstrated their bravery by bringing along the new H-P micro - the H-P 150. This machine is based on the 8088, and runs MS-DOS. Its novel features include a 'touch screen' and 3.5" drive, with disks that are totally protected from the environment - (MacIntosh, whose existence has never been admitted - {except by Woz - Ed.}) is reputed to use similar drives. The card index software demonstrated used the screen features very effectively.



Announcements Continued from page 5

The December meeting was held on Dec 8th at the Minnesota School of Business when Michael Fraase, of Arts & Farces, (video graphics design company) demonstrated some software packages and the Power Pad, a graphics tablet and software like the Koala pad. The Power Pad provides a larger surface than Koala, and the ability to draw graphs using the grid marked on the Pad. It will also work with some existing software packages. If there is enough interest for a bulk purchase, please contact either Michael Fraase or myself. Al Peterman also talked about some experiences with color monitors and TV's and suggested that anyone considering a color monitor purchase for the Holiday Season should review Dan Buchler's article from the December newsletter.

The first meeting of 1984 will be held on January 12th at the Minnesota School of Business when we will run our second Training Seminar, aimed at beginners and others who wish to learn some new tricks! Speakers & topics are as follows:

- Introduction to Computers - Steve Johnson
- Applesoft & DOS - Ken Ruzek, Jr.
- Hardware interfacing - Al Peterman
- Introduction to Databases - Gene Kasper
- Database Applications - Kathy Leo
- Utilities - Dick Marchiafava

Advise all your friends & neighbors who buy an Apple for Christmas that this program is aimed at them.

The January main meeting, on Jan 18th will feature a talk by Leighton Seigel. This is the first, hopefully, of many, main meeting topics presented by Business SIG members. The talk will feature Mini'Scrip, a program written by Leighton, and sold as a Mini'app'les Software Disk (MSD) under that title. The program is designed to provide home/small business accounting requirements.

I have arranged a "New Year's Special" for bulk LISA purchases from Computer Professionals, so if you really wish to give your spouse a present he/she will remember, please give me a call at 888-9447 and we can discuss the details! (Subir - how about arranging a bulk purchase of 'Macs' for our youngest offsprings? - Ed.)

Source Bid

The club purchased, but did not use, a subscription to the Source with full documentation. This will be offered to the club member submitting the highest bid by Jan 9th, 1984. Call Hugh Kurtzman.

N.W. Branch?
by Jere Kauffman

We are thinking about forming a NW branch centered around New Hope (depending on response). If you think that you might be interested in occasionally attending a meeting, please call Jere Kauffman at 535-6745.

Medical SIG
by Stewart Haight

The Medical SIG will hold meetings jointly with the newly formed Minnesota Medical Computing Consortium (MMCC) at 7:00 pm on the second Wednesday of odd numbered months at the Health Associations Center, 2221 University Ave. S.E., Room 115. At the January 11 meeting Dr. Lynda Ellis of the University of Minnesota will discuss computer applications in patient education and continuing medical education. A demonstration of some health risks appraisals running on the Apple will also be presented. MMCC is also maintaining a BBS oriented toward medical professionals, the Minnesota Medical Conference Tree. For further information contact myself (612 644-4375) or Dr. Donald Deye (612 434-6622).

Investment SIG

by Eric Holterman

Starting with the January meeting, the Investment SIG will resume meeting on the third Thursday of the month instead of as a cluster group following the regular meeting. So mark Thursday, January 19, on your calendars. There will be a demonstration of Cyber-Scan by Harold Hoffman, the program's author. The program's extensive capabilities can be applied to both commodities and stocks.

The meeting will be at the Hennepin County Library at Southdale which is located at 7001 York Avenue South. It is on the east side of the street. Target is located on the west side of York. It is a large, white, modernistic building with plenty of off street parking. The meeting will be in the Berry Room on the first floor (you go in on the ground floor, first is one flight up... what I used to think of as second floor). Doors for the meeting open at 7 PM and the meeting will start at 7:15 PM. We must be out of the building no later than 9:30 so the meeting will adjourn at 9:15 PM.

GOTO 7



Announcements Concluded from page 6

Don Steinkamp did a fine job with the Market Analyst at our December meeting. Quite a few questions and alot of interest. Too bad we hadn't resumed our seperate SIG meetings a month earlier so we would have had a bit more time.

Calendar Announcements

Please submit all calendar dates, changes, etc. to Ron Androff. Ron has volunteered to be the calendar maker for the newsletter. As for all newsletter items, timely submission helps us all!

DOMs by Mail

Continuing Service for Mini'app'les Members

by Chuck Thiesfeld

Now members can order DOMs (not Mini'app'les Software) using their own diskettes. Here is the procedure:

Make up a package containing the following:

1. Blank diskette (or diskettes if more than one is desired).
2. Mailer. Diskettes will be returned in same protective device used to send the diskettes, provided such will fit in the mailer.
3. Send correct postage in stamps - do not send money in lieu of stamps.
4. Self-addressed return label.
5. \$1.00 copying fee per DOM or disk.
6. A note indicating which DOMs are desired.

Send to:

C. Thiesfeld
8416 Xerxes Avenue S.
Bloomington, MN 55431

Please allow 60 days for delivery in USA. Incomplete packages will not be returned. DOMs 1 thru 26, except 18, EAMON #3, and 8 Pascal disks are currently available. Mini'app'les Software disks (MSD) are not available! General questions about DOMs should be addressed to Terry Schoepner. Questions on DOM content should be addressed to Al Peterman, our DOM editor.

Please note that DOMs may also be purchased on club-supplied media by sending \$7.50 to the software sales coordinator. See back of membership list. The first 3 Mini'app'les Software Disks (MSD): #1 - Mini'scrip, #2 - Micro Mailer, and #3 - Higher Print/Higher Word Processor/Message Maker are available by mail from Terry for \$17.50. Or, the latest DOMs are available at regular meetings, and at some Branch meetings, for sale to members at \$5 each, and the MSDs for \$15 each.



We solve the problems of the problem-solvers.

Dayton's Computer Repair Service

We're a fully authorized Apple Service Center and service IBM Personal Computers as well. We offer extended service contracts on Apple and IBM Personal Computers as well as Epson, Comrex, NEC, and OKIDATA printers. You may charge the repairs on your Dayton's Flexible, Furnish-A-Home, or Invoice Accounts. VISA, MasterCard and The American Express Card are 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 Computer Repair Service, 623-7123.

DAYTON'S

RFP Concluded from page 25

RECEIPT AND HANDLING OF PROPOSALS

Proposals must be received not later than Feb. 6, 1984, at the address of the Coordinator or at the Club's published address. He will then assemble the bids, make recommendations, and present them to the next Mini'app'les Board meeting. The Board meetings are open to the membership. Recommendations will be based on price and quality where there are multiple bids for like or similar products. Determination of the successful bidder(s) will be made at the Board meeting by the club officers. Sales may be made by the successful bidder(s) at the next meeting. The first six month and yearly period shall begin the month following the Board meeting.

COORDINATOR

For the year 1984, the bulk purchase coordinator of consumable products is
Ken Slingsby
Rt. #2
Welch, Mn 55089



DISKCOVER

INTRODUCING THE
POWER PAD

FROM CHALKBOARD
For Your Apple Computer*

LIMITED TIME OFFER.

REGULAR PRICE \$150⁰⁰

NOW \$124⁹⁵

Diskcover now has an electronic bulletin board service after store hours.

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

*No additional club discounts.

*Future release of the Power Pad for the IBM, Commodore 64 and the Atari computers.

-8-

SOFTWARE™

DOM #28

by Alan Peterman

The latest DOM is a combination of IAC disk #29 and some programs from our local members. The International Apple Corp disk contained the BINARY UTILITY GRAPHICS system for creating graphs in an easy and straightforward way. In addition, one of our members, Ken Ruzek, has written several programs to further simplify the use of "BUG". Also, since I continually get requests for the updated version of the SPREADSHEET SORT (from DOM 23), the newest version is on this disk. Lastly, there are some programs to calculate investment returns, portfolio value and to run a disk for head cleaning. I am sorry that this article on the DOM is appearing AFTER the disk was available at the December meeting, but it was decided that delaying the disk just because the article had not appeared in the previous newsletter was not justified.

BINARY UTILITY GRAPHICS (BUG)

Binary Utility Graphics is a plotting 'language' which was written by Kenneth Lind for a Toronto-based user group, the Loyal Ontario Group Interested in Computers. It is an excellent program for creating graphs in a quick and simple manner.

Anyone who has attempted to use the Apple's high-resolution screen for plotting graphs will have encountered several difficulties. One problem is that the hi-res screen, which is made up of several thousand dots (or pixels) numbering from 0 to 279 horizontally and vertically from 0 to 191, has a starting point of 0,0 located at the top left corner, whereas the 0,0 coordinate of a conventional graph is at the lower left. Converting various X- and Y-axis scales into these numbers of points may not be easy, and the need to plot various shapes (e.g., bar plots, labels, special points) is usually beyond the programming abilities of a neophytic Apple owner. Binary Utility Graphics (or BUG as it is known) was developed for the purpose of facilitating this graphing process.

BUG consists of 27 commands which serve as enhancements to Applesoft. The commands are linked into Applesoft programs using the ampersand (&) command. Commands included within BUG allow the user to plot five different types of points and lines, different bars, and to label the charts along the tic marks and at the top and bottom. There are 3 high-resolution screens which can be used for plots, although only 2 can be seen. Commands which move and swap these screens are executed rapidly, as are the commands to load and save the pictures on disk.

The type of font incorporated into the chart's labels can be defined by the user, and any hi-res character set which is compatible with the DOS TOOL KIT from Apple Computer Inc. will work properly.

The system consists of a machine language program "BUG" which may be BRUN. For ease of use an Applesoft program "BUG HELLO" will BRUN the binary file and allow loading of special character fonts, 5 of which are included on the disk. Also there are 5 DEMO programs to show the use of the BUG system and an INSTRUCTIONS program to print out the extensive documentation which is included on the disk as text files. The text files are standard DOS files which may be read into a word processor if desired.

In addition there are several programs written by Ken Ruzek to allow menu driven graphing and macro keys to simplify the use of the system. These programs, as well as the other programs from the Mini'app'les members, are described below:

BUGMENU

A program by Ken Ruzek to let you have a menu to create graphs from the "BUG" system. It allows easy menu driven graphing. A CTRL(G) will exit from most of the functions.

KEYMAC

A binary program submitted by Ken Ruzek to work with "BUGMAC" to create a set of macros for the "BUG" system. With this macro capability you can enter an ESC B to bar plot instead of the "& B PLOT" COMMAND.

BUGMAC

The rest of the macro system from Ken Ruzek. To start these program all one need do is "EXEC DO BUGMAC". For a complete list of the macro commands run the program "BUGMAC MACRO DEF'S".

BUGMAC MACRO DEF'S

A program to display the macros in the "BUGMAC" system. It can print on any standard printer in SLOT 1.

GOTO 10



Get Wise

Women In Science and Engineering

by Jane Chatterjee

The first GET WISE Conference was held on Saturday November 5th, 1983, at the Bell Museum of Natural History, Minneapolis. The conference was jointly sponsored by the Association for Women in Science (AWIS), the Bell Museum, and the Minnesota Science Teachers Association (MSTA), who provided vital publicity.

The purpose of the conference was to introduce young women to career options available in science and technology and to encourage such career choices. Emphasis was placed on early awareness and advance planning of career goals. The important initial step, of enrolling in science and math classes in high school, was stressed.

The conference was centered around the National Science Foundation film "Science: Woman's Work", in which women working in various scientific fields are interviewed and filmed at their work and at home.

There followed discussion groups, where ideas from the film were raised and developed. Workshops were presented on career opportunities in science and technology and the accompanying educational and training requirements.

The conference finale was a one-person play, "Margaret Mead" depicting the life of the anthropologist. It was presented by local actress Marcianna Stanislavski.

The conference was well attended by school students and their teachers. It was a great success and raised some very pertinent issues, such as the need to integrate a scientific career with home and family. The conference provided role models, motivation and practical advice for young women considering scientific careers.

The conference will be repeated in Fall, 1984. It will be publicized through local educational, corporate and media channels.

The film "Science: Woman's Work" will be shown, and issues discussed, in a session at the Minnesota Science Teachers' Association conference in March, 1984.

Further information on GET WISE 1984, can be obtained from the Planning Committee.

Patricia Arscott	Univ. of Minnesota	373-1744
Jane Chatterjee	Conroy Associates	888-9447
Gordon Murdock	Bell Museum	373-3192
Claudia Poser	3M Company	733-6895



DOM #28 Concluded from page 9

QTRLY/ANNUAL RETURN

DO BUGMAC

An EXEC file for the "BUGMAC" macro system. To start the BUGMAC system first type "BRUN BUG (c/r)" the "EXEC DO BUGMAC".

A program to calculate quarterly and annual returns on a portfolio of investments. It is limited in scope but could be expanded by replicating its code or preferably by setting up subroutines for many of the sections. By Tom Alexander.

SSORT

The improved spreadsheet sort. It now allows negative numbers and will load DOS onto the RAM card in 64K machines. By Richard H. Peterson.

LT/ST GAIN/LOSS

A program to analyze long and short term gains and losses. The program produces a summary of the long and short term gains for analyzing the taxable status. It also can be expanded as needed. Also by Tom Alexander.

DICK'S HEAD CLEANER

A program submitted by Dick Marchiafava that will run a drive to spin a head cleaning disk.

MARKET VALUE

A program to generate current market value of a portfolio. By Tom Alexander.





THE Spreadsheet Vers 2.0 Revisited

by John L. Hansen

In the September 1983 issue of the Mini'app'les Newsletter, I reported some timing tests comparing VisiCalc™ (VC), THE Spreadsheet Ver. 1.0 (SS1), and THE Spreadsheet Ver. 2.0 (SS2). I recently received an "Updated" copy of SS2 from A.P.P.L.E. along with a note stating that all known errors had been corrected. Because I had some negative comments in my original tests, it seemed reasonable to do some retests.

I used the same spreadsheet table that I used in the earlier tests. To clarify a statement in the original article, I should mention that the MZG spreadsheet of 35 columns and 116 rows was reduced to 92 rows for all the tests, not just for THE Spreadsheet Ver. 1.0.

Times are again reported as seconds (7.49 seconds) or minutes and seconds (1:37.70 = 1 minute 37.70 seconds). TFTM = Too Fast To Measure. Times were measured for the 40-column and 80-column versions of the update, SS2U (40) and SS2U (80) and are compared to the previous values for the original, SS2 (40) and SS2 (80). SS1 (40), VC (40), and VC (80) values from the original tests are not shown in the table below, but will have to be checked in the earlier article.

COMMENTS:

1. SS2U no longer replicates the cell value in Manual Recalculation Mode, but gives the correct calculated answer immediately and completes the replicated calculations even faster than VisiCalc™ (Compare Tests 16b and 17b in the table below with those in the table in the September issue). The correct values were also given immediately in Auto Recalculation Mode, though additional data cannot be entered until the time shown has elapsed.
2. Scrolling times (Lines 14 and 15) showed little change in the 40-column version, but significant improvement in the 80-column version, though still not as fast as SS1 (40), VC (40), and VC (80). Similar results were obtained in Cursor movement tests (Lines 10-13), but SS2U (80) times were now better than those of VC (80).
3. The screen update speeds have improved considerably in the updated 80-column version.

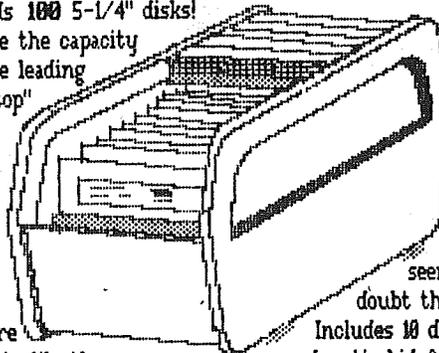
4. Except as noted, the recalculation speeds have not changed significantly between the original version and the updated one. However, as noted above, the improved replication speeds in manual recalculation are spectacular.
5. In my evaluation-form tabulation, I was no longer able to outtype my typeahead buffer with SS2U. This will permit me to do tabulations next year that I could not do this year.
6. Outstanding features continue to be automatic checking for extra RAM memory and the ability to set individual column widths (including zero width). Using the zero-width feature, it is possible to print only desired columns of a table without affecting calculations and then recall the missing columns by reassigning the original column width. Trying to print selected columns with VC or SS1 can be very frustrating.

GOTO 13

BETTER DEALS HERE!

ROLLTOP 100 DISK FILE **HOLDS MORE, COSTS LESS!**

Holds 100 5-1/4" disks!
Twice the capacity of the leading "flip-top" file.
Takes no more desk space!
Costs no more for this file than files holding only 50. Much, much cheaper than buying boxes that hold 10 disks each. Retail price is only \$36. Our price only \$31.



An outstanding design combining elegant roll-top cover with computer-color case. This is one of the BEST quality files we've seen, and without a doubt the BEST BUY! Includes 10 diskette dividers and anti-skid feet.

Minnesota residents add sales tax.
Include \$3 per order for shipping.

MICRO MAIL

Dept. M4 P.O. Box 1451, Burnsville, MN 55337

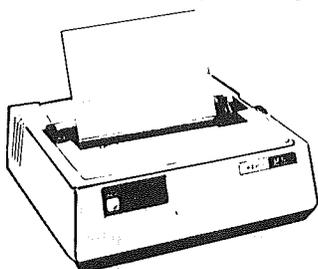
WE'RE NO. 1

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.

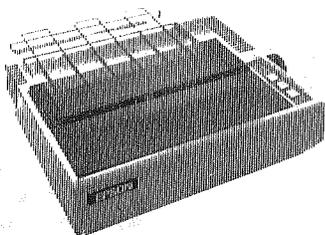
OKIDATA MICROLINE 92



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

Qty. _____ @ **\$539.95**

EPSON RX-80



- All features of old MC-80
- 100 CPS print speed
- Lower case decenders
- Adjustable tractors
- Bidirectional logic seeking
- Subscripts, superscripts and underlining

Qty. _____ @ **\$299.00**

HOLIDAY PACK



Purchase one box of Apple format Verbatim Datafile diskettes and receive a head cleaning kit, **FREE**. The holiday pack also contains a plastic storage case.

See us today and stock up on this great stocking stuffer while specially priced for the holiday season. Quantities are limited and restrictions apply.

We also carry paper!

PRINTERS

_____	C. ITOH Prowriter 8510 P	@ \$ 375.00
_____	EPSON RX-80	@ \$ 299.00
_____	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	@ \$1,599.95
Qty		

Some Printers subject to availability

INTERFACE CARDS

_____	Grappier +, Graphics Interface	@ \$ 127.00
_____	The Bufferboard (Printer Buffer)	@ \$ 127.00
_____	Buffered Grappier + (Bufferboard & Grappier 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	@ \$29.75
_____	5000 Continuous labels	@ \$15.25
_____	2000 labels with 9 1/2" Carrier	@ \$ 9.25
Qty	Tractor Index Cards	

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
_____	5 1/4" Library case	@ \$ 2.50
Qty		

DISKETTES

All Formats Available

FOR THE BEST PRICES ON DISKETTES CALL CITY DESK

Verbatim maxell ELEPHANT

SPECIAL

ELEPHANT MEMORY #1 DISKETTES

NOW ONLY **\$16.50**/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



Spreadsheet Concluded from page 11

7. I am still disappointed that SS2U does not have the text-streaming feature of SS1. Perhaps someday someone will combine all of these features in one program and give us a super spreadsheet.

the improvements made make it an outstanding value at \$75.00 and I certainly did not hesitate to send in the \$5.00 update fee requested by A.P.P.L.E. If you need a spreadsheet, SS2 (updated) should be included in your list to evaluate — you'll probably conclude it is your best buy.

Based on my test results on the updated version of THE Spreadsheet Ver. 2.0, I feel

TEST	SS2 (40)	SS2U (40)	SS2 (80)	SS2U (80)
1. Save text file	46.82	47.10	47.00	47.12
3. Load text file	1:37.60	1:37.70	1:47.76	1:40.13
Recalculation:				
5. Manual at E92	20.20	22.34	20.28	22.33
6. Manual at AI92	20.32	22.44	21.12	22.87
7. Auto, data addition	20.26	22.38	20.87	22.90
8. Auto, data deletion	20.22	22.37	20.88	22.90
9. SUM(E7..E91)				
9a. Auto	20.65	22.60	20.81	22.61
9b. Manual	TFTM	TFTM	TFTM	TFTM
Cursor Movement:				
10. From A1 to A92	0.44	0.43	2.68	0.70
11. From A92 to A1	0.40	0.40	2.57	0.76
12. From A1 to AI92	0.49	0.46	2.82	1.03
13. From AI92 to A1	0.48	0.43	2.66	0.84
Scrolling Times:				
14. Row 21 onto screen	0.44	0.44	2.30	0.71
15. Right column onto screen	0.47	0.51	2.15	0.83
Replication:				
16. E94 = D94*1.1 from F94..AB94				
16a. Auto Recalc.	20.90	23.28	21.10	23.36
16b. Manual Recalc.	20.84	0.58	20.89	0.63
17. E92 = SUM(E7..E91) from F92..AB92				
17a. Auto Recalc.	24.10	26.66	24.37	26.57
17b. Manual Recalc.	27.67	4.03	24.18	4.04

Mice

by Dan Buchler

Your editor heard that Mice were loose at the MECC conference and that the exhibits were free, so I hurried over.

The Apple mouse is like other manufacturers' mice. The software package being demonstrated was similar to the Koala-Pad support software but more extensive. There were ways to enter text.

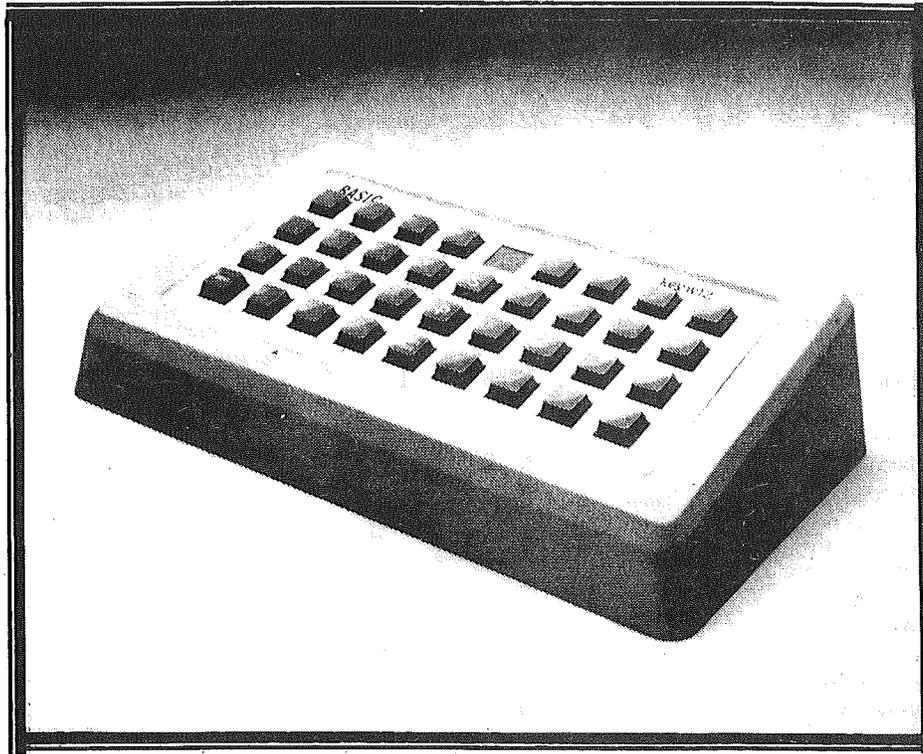
The mouse comes with an interface board (with its own on board 6502 chip!). We were told

that the mouse will only work with Pro-DOS. Also, the software that comes with the mouse supports the Apple DMP printer. And, because that software generally outputs to the printer in graphics mode, such software will likely not work with any other printer except perhaps the C. Itoh Prowriter.

Cost of mouse, board and 'tablet' like software will be around \$150.

NAME THAT KEY

(ALL 248 OF THEM!)



keywiz[®] VIP

(Very Intelligent Peripheral)

THE FIRST USER DEFINABLE KEYBOARD

- Define each key with up to 8 characters of your choice directly from your computer keyboard
- Redefine any key - anytime - for any software program
- Each key is completely user definable without software or disk interaction
- 62 user definable keys (31 lower case/31 shifted) per keyboard
- Stores up to 4 (62 key) keyboards in its own memory
- Switch between keyboards at the touch of a button making all 248 user defined keys available
- KeyWiz is complete - no other parts to buy or PROMs to purchase and does not disable your keyboard

TURN THE POWER "OFF" and when you turn it on again - it's still there!

Full 1 Year Warranty



Creative Computer Peripherals Inc.

Aztec Environmental Center
1044 Lacey Road, Forked River, N.J. 08731
THE BIG NAME IN SMALL COMPUTER PERIPHERALS

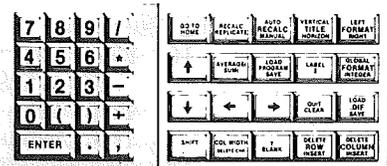
ORDERS ONLY 800-225-0091
INFORMATION 609-693-0002



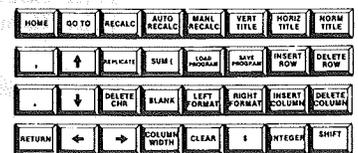
Visicalc is a registered trademark of Visicorp
Apple II is a registered trademark of Apple Computer, Inc
Ace is a registered trademark of Franklin Computer, Inc

ALSO AVAILABLE PRE-PROGRAMMED FUNCTION KEYBOARDS: OUR STANDARD keyWIZ 83 & keyWIZ CONVERTIBLE

- Preprogrammed Auxiliary Keyboards with 30 Visicalc/AceCalc Function Keys
- Available with a Numeric Key Pad (our Model "83") or or without ("Convertible" Model) works with any program.
- Also available are the listed Word Processor Function Keys. (Optionally on the "83" model for \$40.00 and provided without charge in the "Convertible" Model)
- Why waste time memorizing word processor or Calc commands or stringing key strokes together when KeyWiz utilizes single key strokes labeled in plain English. KeyWiz makes it all understandable.
- 4 Arrow Keys for full cursor positioning - a great asset to any Calc or word processor user.
- End Users - KeyWiz completes your microcomputer package.
- Dealers - KeyWiz makes it easier to sell software.
- Educators - KeyWiz sharply reduces training time and saves you \$ \$ \$.
- OEM's - Provide a preprogrammed keyboard with that software package you're marketing. Call us about Custom Key Pads.



KeyWiz 83



Convertible

CURRENTLY AVAILABLE

- Applewriter II
- Screenwriter II
- Super Text
- Magic Window II
- Word Star
- Executive Secretary
- SVS Word Handler
- PIE Writer
- Easy Writer

ORDER NOW

For the: APPLE II APPLE II e or FRANKLIN ACE

Standard KeyWiz '83

Visicalc / Acecalc Key pad w/numeric key pad 299.00

With optional Word Processor 339.00

(Choose one:)

KeyWiz Convertible

Visicalc / Acecalc key pad w/Word Processor 299.00

(Choose one:)

Custom Key Module (Send for specs) 40.00

KEYWIZ VIP for Apple II or Apple IIe

User Definable Keyboard with plastic Applesoft Basic Template, Pascal Template and 2 Blanks 439.00

Add \$8.00 Shipping/Handling to order

6% Sales Tax in New Jersey

Send \$3.00 for our Informative Users Manual



MECC '83

by Jane Chatterjee
 Conroy Associates

Copyright: Conroy Associates, 1983

The Minnesota Educational Computing Consortium (MECC) has been assisting Minnesota schools and colleges to implement educational computing for over 10 years. MECC provides a range of services to education, including computer software development and distribution, computer purchase contracts, in-service staff training and management information services. MECC publishes an extensive software catalog and a periodic newsletter, "MECC Network".

The second annual MECC Conference, 'MECC '83', was held in Minneapolis, November 18th to 22nd. The main 2-day conference was preceded by 3 days of workshops.

The workshop topics included district computer planning, planning for in-service training, classroom computer use, LOGO in the classroom, Visicalc™ for administrators and courseware development.

I attended the workshop on designing and developing courseware, which lasted for two half-days, and involved a mixture of classroom and lab sessions. The classroom sessions dealt with the MECC process of courseware development their final product consists of a disc of instructional programs with accompanying support materials. The process consists of two stages: the instructional design and the subsequent product development. The design process involves choosing the subject matter, specifying objectives and deciding on the appropriateness of the project for microcomputer use. A design specification is produced and implemented. The development process takes into account instructional considerations, such as student interaction with the software, and programming considerations, such as screen layout, use of text, graphics, sound, and student input processing. The product must then be debugged, and go through an extensive review and modification process before it is considered finished. In the lab sessions of the workshop, we were able to review some courseware, according to suggested criteria, and to use several programming utilities, including the Koala Pad. I was very impressed both with the standard of the workshop, and the fascinating glimpse behind the scenes at MECC which it afforded.

The main conference consisted of over 120 general sessions. These ran hourly, usually 12 or more concurrently! The general areas covered included planning for computers, problem solving with computers, use of

computers in almost every subject area imaginable, use of computers from the elementary level to higher education and use of computers in school and classroom management.

Presenters included state and nationally recognised experts in the educational computing field. It was quite a challenge to choose between the generally excellent quality, competing sessions.

My particular interest is in instructional design for science education. I attended a variety of sessions, from those on broad topics such as educational technology and computer literacy to those on specific programming languages and utilities.

Sessions that I particularly enjoyed were 'Educational Computing- What Next', by Ken Brumbaugh, MECC Executive Director and 'Courseware Evaluation' by Kent Kehrberg, Director of Courseware Development for MECC. The 'What Next' presentation was an information-packed session on where educational computing has come from and where it is expected to go in the next few years. The 'Courseware Evaluation' session offered some valuable advice on the topic, together with a pragmatic approach. One last session I should mention is 'MECC Economics Courseware for Micro and Videodisc', by Richard Pollak, director of the videodisc project. This project involves a very impressive marrying of technology it points a way for the future, for courses which are too specialized for small schools to have the requisite faculty expertise.

A vendors' exhibit, containing a wide variety of hardware and software, was present during the conference. Apple introduced the 'mouse' input device (see MICE elsewhere in this newsletter) for the Apple //e, and IBM had a large display of their micros and software.

Two banquets were staged, with keynote speakers Floyd Kvanme, Executive V. P. Sales, Apple Computer and Philip Estridge, Personal Computer Divisional President, IBM. They spoke of the future strategies of their respective companies in the field of microcomputers in education.

Other activities included expertise-sharing sessions and a student programming contest.



For Beginners and Softalk Readers

by Jo Hornung
with input from Steve George
and Eric Holterman

In last month's column I made a number of suggestions relative to reading materials to help beginners learn how to do more with their Apple computers.

After the December newsletter had already been "put to bed" it dawned on me that I had left out one very worthwhile resource which can be yours for one whole year, for free, and with a mere modicum of effort on your part -- simply the mailing of a post card.

This will get you a free trial subscription to Softalk, an excellent publication devoted to the Apple computer. When you bought your Apple you were no doubt advised that you could have this subscription simply for the asking and by supplying the serial number of your computer. If you were like me, you were so busy getting acquainted with your new pride and joy that you didn't pursue the offer.

Not to worry. You still can. I waited a year and a half before I got around to requesting my free subscription -- no problem.

What you do is send your name, address, and Apple serial number with a request for subscription to Softalk Circulation, Box 60, North Hollywood, CA 91603. As usual, you are advised to allow six to eight weeks for processing. Softalk is totally independent of Apple Computer Inc. Sending in your warranty card to Apple Computer does NOT get you a subscription. (Now that I think about it, I believe that was my initial impression.)

So. If you have purchased an Apple and have not yet done so, get that card in the mail. Your name, address, Apple serial number and signature are all that is needed -- even if you have already owned your Apple for a few months.

Softalk, issued monthly, is a fat collection of goodies. The first issue Steve George received was just under 80 pages, and now it has grown to just over 300 (in 2 years!). The December issue has over 400 pages! In addition to several special articles each month, there are a number of regular features -- some geared specifically to beginners. Each issue has "Beginners' Corner," "The Graphics Page," "If Then Maybe, by the Softalk Sages," "Marketalk News," "Mind Your Business," and "Open Discussion," among many other very interesting ongoing departments. Other features cover general interest, Assembly Language, Pascal, Basic, DOS, etc.

plus contests, interviews, and reviews. Well worth the subscription price, and an even better deal for the trial period!

Ergo. The word from this beginner for this month is: If you have not yet requested your free trial subscription to Softalk, hop to it. Now. You'll be glad you did. You can use the form below.

Yes, I'm a new Apple owner

Apple Serial # _____

Name _____

St. Addr. _____

City, ST, ZIP _____

Signature _____

Renewals

Those of you who receive a renewal notice are eligible for a discount if you are also members of A.P.P.L.E. Softalk has a unique arrangement with A.P.P.L.E. You may renew at a discount of \$3.00 (\$15.00 instead of \$18.00) by sending a note with your renewal stating that you are a member of A.P.P.L.E. and include your membership number. Research for this information is courtesy of Eric Holterman.



MECC '83 Concluded from page 15

Conference attendance must have approached 2000 people. Attendees represented a wide variety of areas of education, expertise and interest. They came from all over the USA, from Canada and a number of other countries.

The cost of the general conference was \$125.00 (\$75.00 for Minnesota residents and MECC members). Workshops cost \$75.00 each.

Address for further information about MECC, including addition to their newsletter mailing list:

MECC
3490 Lexington Ave N,
St Paul,
MN 55112
Phone (612) 481 3500





Sixth Finger

A low cost Keyboard Repeater

by Dick Marchiafava

For some time I had been considering the addition of a Keyboard Repeater device to my Apple system. At times I found that I was trying to manipulate three or four keys at one time. Sometimes this got awkward for me to do. It seemed apparent that having such a device would enhance the Apple keyboard when doing word processing and with spreadsheets. A check of available repeaters showed that the units available were in the price range of \$30.00 and up. Information on these units indicated the possibility that they might be software dependent.

Recently, I found a unit called SIXTH FINGER, by Ivers Specialties. This is a simple device with an adjustable time delay and the ability to switch the repeater off. It is intended for late Revision 6, Revision 7 and later Apples. These are the ones with an encoder board under the keyboard. At a price of \$12.95 this seemed to be a cost effective answer if it worked. I ordered one.

When the SIXTH FINGER arrived I found that I had a little board that is smaller than a commemorative postage stamp, with four parts on it. It is well made, but it didn't look like much. I followed the installation directions, and in 5 minutes I had the repeater in and operating!

This unit gives an automatic, adjustable delay repeat on all keys except ESC, CTRL and SHIFT. The repeat operation can be turned off by turning the the time delay control to maximum delay. The repeat function does not extend to the numeric keypad that I have attached to my Apple. The board also has a tie point to connect a one wire shift key mod.

The operation of this repeater seems to be independent of software. I have not found any software that it does not work with yet, and have not experienced any instances of interference with the running of any software. The repeater device has been very useful to me in word processing, and adds a new power to the cursor move commands when working with my spreadsheet.

After seeing it in operation, I realize that the manufacturer is selling function, and not component count. I am satisfied with the operation of the SIXTH FINGER keyboard repeater, and feel that it is a cost effective device. If anyone wants further information about the SIXTH FINGER, or wishes to purchase one, I will be distributing it.



COMPLEAT.BIN Update

by Steve George

If you have purchased the "All About DOS" diskettes from Call -A.P.P.L.E., you will want to make the following patches within the COMPLEAT.BIN file:

COMPLEAT.BIN, A\$800, L\$306

Address	old code	new code
8BF	0F	0E
8D6	09	C9
939	C0	00
98C	80	08
9A0	AB	A8
A09	A0	0A
AA5	A0	0A

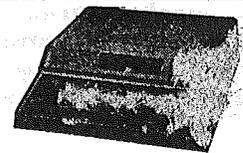
I tried these changes on a copy and it seems to have fixed the problems with the S)tatus Menu choices: T,S,B,A, etc. Only the disk info is incorrect, the book version is correct as published for this file.



Apple/CPM Compatible:

ROMAR II - 64K

80K expands to 192K
72 keys w num pad
func keys - BASIC,
PASCAL, & CP/M



\$672.00

IBM Compatible:

SANYO MBC 550

\$995.00

128K RAM Standard
Single Disk Drive
Spread Sheet Software
Word Processing
Software

12" Amber Monitor	\$175
Apple Z-80 CP/M Card	130
Apple IIe 80 Column Card	160
Printer Controller	120
Grappler Type Printer Controller	125
Above + 64K Buffer & Screen Dump	224
MITAC Disc Drive	265
BMC Color Monitor	295
2 Disc Controller	89
Star Gemini 10X Printer	299

Stock Market Technical
Analyst Software \$495

CSC

COMPUTER SYSTEMS CORP.

PERSONAL COMPUTER HARDWARE & PROGRAMS

927-5291

574-0291



Increasing Disk Storage

Part 2

by Steve George

Ways to Liberate Disk Space

If you'd like to "liberate" disk storage space, it's not too terribly difficult to do. Probably the easiest way is to free-up that portion of Track (T) \$2 which is not used by DOS but is automatically reserved (by DOS, for DOS) anyway! DOS takes up all of T 0 & T 1 but less than half of T 2. Sectors (S) 5 thru S \$F can be 'write-enabled' with a ZAP program thereby liberating an additional 11 (decimal) sectors. This is accomplished by changing the info stored at T/S \$11/0. This area, called the (VTOC) Volume Table of Contents, keeps track of:

- which T/S are available for program storage;
- which are already used (so it can't SAVE program BBB over a portion of program AAA);
- where the next program will be SAVED;
- where programs should 'never' be stored (on the DOS Tracks and the CATALOG Directory track);
- which parts of the disk have been freed-up by DELETED files;

plus lots more. (Whew!)

Freeing up the portion of T 2 adds just 2% to your total program storage area over a normal disk. But in some cases this may be just enough extra room to handle that special 'must-be-on-this-disk' program.

Another place to "liberate" some program space is within the Directory itself. A disk is normally INITed with a standard DOS which provides room for 105 file names!!! How many times have YOU had that many files on a disk? Probably never, right? That's because the AVERAGE file size would be less than 4 sectors long! (105 titles require 105 T/S Lists — using up 105 sectors in the process — leaving only 391 storage sectors available for the 105 programs.) To incorporate this method, you simply delete a portion of the space allotted to the Directory by altering the bytes which link the catalog sectors together, and then reflect the freed sectors in the VTOC. This can be a bit tricky though, so be careful. The DOS Manual provides insight to the seemingly cryptic bytes located in the VTOC which represent the free/used sectors (see pp 132-4). A portion of DOS also has to be altered because T\$11 is not normally written to nor read from with program data. So far I've experienced no problems with the disks/programs which have undergone this transformation.

[[[[[ZAPZAPZAPZAPZAPZAPZAP Poof!!!!]]]]] 

Minutes

Officers' meeting Dec. 14, 1983

by Hugh Kurtzman

Treasurer reported that he has now put \$8000 in a savings account, because Minn Federal cannot pay interest on the checking. There is a balance of \$2914.94 in the checking account.

A motion was passed that independent computer user groups may apply for merger with Mini'app'les. Upon approval of the Exec. Committee, existing members in good standing on a specified date will be accepted into Mini'app'les upon payment of the regular annual dues. New Member Folios will be available at the current price.

It was agreed that we will continue to support computer shows and fair(e)s as we are invited.

Because our club has grown so fast we have not kept up our inventory of club property; therefore, anyone who has any club property (disks, doms, equipment, newsletters, IAC disks, etc.) is asked to please send a list of those items to the Secretary.

A proposal to sell some software at meetings by Gene Kasper was turned down.

Scott Ueland has 50 disks of public domain CP/M software he will be making available to the club.

There is a need for an election committee to be formed so procedures can be formulated well before the election. Passed.

Your Secretary, Hugh Kurtzman 



Binary Files

by Steve George

SPECIFYING BSAVE'S "L" PARAMETER Determining Correct Binary File Lengths

I read with great interest in the August Mini'app'les newsletter, AN INTRODUCTION TO ASSEMBLY LANGUAGE PROGRAMMING, by Charles R. Smith. As with any article which is an introduction, it was fairly general but I thought it was quite complete and contained some valuable information.

The only area on which I, a "budding" assembly language user/programmer, would like to offer comment and a correction, is that of the LENGTH of BSAVEs. The two examples on page 19, right column, 1/2 way down the page are incorrect. They should read:

```
BSAVE MYPROGRAM,A$300,L$21    and
BSAVE MYPROGRAM,A768,L33
```

A fair number of people have told me that they have difficulty figuring out the length of a binary file, especially when you consider that the information is placed into HEXidecimal (HEX) addresses (base-16). However, no matter what the base-number, it is important to think about what you're doing! For example, if you were working with base-10 and have several objects numbered 1 through 20, we all know that you have 20 objects and the "length" would be 20 units. Note that: the length is not the 'DIFFERENCE' of the two numbers, but the DIFFERENCE + 1.

This is the only 'magic' necessary for determining the Length parameter when doing a BSAVE: "L" = 'Difference' + 1. That's all there is to it!

When determining the length of the example program from the August article, the file address begins with \$300 (\$ denotes HEX numbering) and ends with \$320, and it would be natural for many of us to say it was "\$20" long...but really it is "\$21" because $\$320 - \$300 + 1 = \$21$.

A very handy feature of the MONITOR (* prompt showing and entered from BASIC with CALL -151) is that it will do HEX addition and subtraction in immediate mode. Say you have a lengthy binary file which you have just typed in from a magazine which begins at \$0803 and ends at \$0B7E. An easy way to figure out the length would be to stay in or enter the MONITOR and simply subtract the 'less significant' pair of numbers of the beginning address from the 'less significant' pair of numbers of the ending address. (Less significant pair simply means the lower-valued

pair of digits. In this case: 7E (from \$0B7E) minus 03 (from \$0803))

```
*7E-03 <CR> (return key)
```

And your Apple will respond with the answer:
=7B

Then type in the first pairs (the 'most significant' pairs) again subtracting the 'lower address' pair from the 'higher addresses' pair, like so:

```
*0B-08 <CR>
```

And the result will appear:
=03

With this information, we realize that the Difference between the ending address and the starting address is \$37B. However, the LENGTH of your file will be this Difference + 1 = \$37C which should be used for the "L" parameter when you BSAVE your newly typed masterpiece; ie:

```
BSAVE MASTERPIECE,A$803,L$37C
```

One area of confusion may arise when subtracting or adding using this built-in function of the MONITOR. When you subtract a large number from a smaller one, the MONITOR will do an automatic "borrow". In a like manner, when adding, if the result overflows 2 HEX digits, a "carry" will occur. In either case, the figures shown on your screen will be correct for the 'less significant' pairs, but it is up to the user to realize when a "borrow" or "carry" has occurred and take the appropriate 'corrective' action when dealing with the 'most significant' pairs. A correction is necessary because the computer did the "borrow" or "carry" without regard to what is yet to be input for your 'most significant' pairs. (Your Apple is a very powerful machine but even it doesn't have any idea just what may be your next input.) The 'corrective action' to take when you are adding and a "carry" occurs is to increase the value of the 'most signif.' pair of the higher address by 1. The 'corrective action' when subtracting and a "borrow" has occurred is to reduce the value of the 'most signif.' pair of the higher address by 1 and continue with the subtraction.

GOTO 20



Binary Files Concluded from page 19

For example: Say you have a binary file which begins at \$10ED and continues all the way through \$370A. Subtracting \$10ED from \$370A could proceed as follows

```
*0A-ED <CR>(immediate mode user input)
=1D          (Apple's response)
```

It is important to realize that a Borrow has occurred, and take that into account when determining either the final answer (LATER), or NOW when subtracting the 'most signif.' pairs of numbers:

---NOW--- or ---LATER---

```
*37-1 <CR>      *37-10 <CR>
(you)           =36          =27
(Apple)
*36-10 <CR>     *27-1 <CR>
(you)           =26          =26
(Apple)
```

(I personally use a variation of the "Now" method because I want to take care of any Borrow before I get a chance to forget it ever occurred. How quickly we forget!)

Recall our LENGTH 'formula' from above: LENGTH = Difference + 1 where Difference = High Address - Low Address, right?

Finally, we end up with the answer: "L" = \$370A - \$10ED + 1 = \$261E the LENGTH parameter for this example. Now you can store it on disk with:

```
BSAVE LONG FILE,A$10ED,L$261E
```

It really isn't as difficult as it first appears! Besides, if you've arbitrarily set the "L" really long when you've BSAVED a program, you could run into trouble either at that time or the next time it's BLOADED and it over-runs some other important data! As Ms. Locks might have said, "Too short is too small, too long is just that, but just right IS perfect".

The first few tries to BSAVE a file, only to have the last address' character miss out on the ride to disk storage because of an 'L' parameter which is one character too short, and you quickly learn how to figure accurate LENGTHS!!!

If you've gotten through this discussion and begin to understand binary file lengths but have always had a squeamish feeling when reading about Bytes, "MSB's" (Most Significant Bit/or Byte) or "LSB's" (Least Significant

Bit/or Byte), then simply substitute "bytes" for "pairs"/"Hex pairs" in the above discussion and never again fear being Byten.

A final comment: It is NOT necessary to be in the MONITOR when you do a BSAVE or BLOAD as this and many other articles show or imply. Also, you can mix-and-match the 'base' for the "A" and "L" parameters. For example, you are allowed to specify a HEX address and a DECimal length. However, to keep things straight in your mind, try to stay with one base-number.

PS: You can also use any legal variable in place of either parameter value. I hope you decide to give HEX numbers a try; they're really not all THAT scary.

[[[[[[[[[[Booooo! GOTCHA!!]]]]]]]]]



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 77½ STREET
RICHFIELD, MINNESOTA 55423 866-3441



ASCII Express

'The Professional' Version 4.2

or

Why are these people wanting another \$50 ?

A review

by Tom Vanderpool

via IAC Bulletin board for newsletter exchange
from an unknown Apple user group

After having ASCII 'PRO' for about a year and using it at least once a day, I was interested to find that there was a new version out, namely the 4.2 version. I will try to point out the differences between it and the 3.46b version that I have been using these many months. This is not to be a tutorial on AE PRO, but a comparison of the two versions. I was wondering why they are offering the 'same thing' for \$50 more. I think that I may have found out why. From my description, maybe you can make a more informed choice on whether to opt for the update or not.

When you are in the unattended mode with the PRO answering the phone for you, one of the most notable changes is that you are allowed a sign-on message. If you have a little explanation of your system or just want to let people know just what computer they are connected to, you are now able to do that. One of the things to watch when using the PRO in the unattended mode is the new meaning of the 'H' command. It now means HANG-UP! So if you go for help and lose the carrier, you know that you are in the new PRO. I have found that you can get help from both versions by typing a '?' instead of 'H'. This seems to be a safer approach. This also points out the NEW 'H' command that is a little more 'elegant' than just disconnecting from someone's computer.

If you are running some other program on-line (such as PMS or On-Line) you are now able to have it run AE PRO and when you disconnect, PRO will then run the program that was in operation before it was executed. This is all done through EXEC files and they caution you that there is extra programming to be done, but I like the added flexibility.

Now for the really good news as far as I am concerned! It supports the Basis internal features which I have been having a hard time doing with the old version. I now can use the built-in 80 columns and it will look just like my Videx card on my Apple at home. Just what I am used to. I can also use the built-in parallel port for a printer and the built-in serial port for the modem. I have 'bombed' several disks of AE PRO trying to support the serial port and an RS-232 modem. All you have

to do is tell it that you want to use these ports in the INSTALL menu.

For the first time user of ASCII EXPRESS 'The Professional' there are the same help menus that we have come to be familiar with. That is menu 1 and 2. Now in addition to that, you are allowed to ask for help using the '?' and it will then ask 'Help on:' and at that point type in, say 'D' for dialing and it will display the different options that you have for dialing. One note here is that EVERY time you ask for help, the disk drive runs. This is different from the older version in that most of the time menu 1 and 2 were in memory. These are now loaded each time you want to refer to them.

Speaking of dialing, if the modem supports tone dialing you can designate it in the dialing string and PRO will take care of it for you. I have not tried it with the MicroModem //e as yet, but am under the impression that it will support it. More on that later.

I understand that some people were having trouble hanging the phone up. To remedy this, they have introduced a hangup delay (which is variable and set using the INSTALL program, of course!).

The INSTALL program is still there and to get 'up and running' you still have the same 4 questions.....

Can you display lower case? (Y/N)
Can you display it now? (Y/N)
What kind of a modem do you have?
(about 13 choices)
What slot is it in?

Hit a carriage return and you are in business! Not bad for a program THIS powerful! Of the 13 choices on the modem end of things, those are the major categories that are supported and most have several others listed in each category. One of the nice NEW features here is that it will also support your own driver if you do not have a modem or interface card listed. I find this hard to



ASCII Express Continued from page 21

believe but (before the Basis was supported I was wishing for JUST this option) I can see the utility in it.

You can now define what the forward arrow character is. This would come in handy if you are connecting to a system that uses a non-standard value for the right arrow.

Also there is a choice now of screen formatting. You can choose truncation which just breaks the words at whatever the right margin is set at or word wrap which will break at the space before a word rather than break the word itself.

You are also allowed to set up a deaf letter set key. This is useful in sending in the deaf mode when you have to 'shift' between letters and numbers. Sometimes things can get confused and this will bring you back to the letter set so that you will have a known starting point.

You can now choose to use XON/XOFF and, if you are using it, how many tiles to send the characters. This would be used if you are not sure that the host is going to get the first one. PRO now supports the ACK/ENQ protocol for exchanging files with an Hewlett/Packard system.

PRO, through the INSTALL program, will allow you to determine HOW many times the number is dialed if you have an autoboot macro designated. This would be nice if you are trying to get on PMS and the line is ALWAYS busy. Just put the disk in, and it will boot and dial the designated number of times before giving up for good. Through the INSTALL program, you are also allowed to have a non-dialing macro designation. This is for modems that are 'on-line' all the time such as the Hayes Smartmodem. This will allow you to autoload the macro and have this element to be sent to the modem. If you need to configure the modem when first turned on, this could be a real help.

The new PRO is a much larger program due to the help files on disk and some of the other 'niceties'. This means that the disk is almost full if you still have all the files on the PRO disk. One way to get around always being out of space is, once again, through the INSTALL program.

You are allowed to set which default SLOT, DRIVE, and VOLUME you want to have active upon boot-up. This is nice if you have PRO on one disk and want all the files on the second drive. Or you can have the files sent to another volume on your hard drive.

With all these options, you will probably find that you want to tailor several different copies of PRO for different special purposes. This is now easy from the INSTALL program because you are allowed to save this version of PRO to disk and stay with in the INSTALL program.

For the editor the only new commands that I could find were .A and .Z.

The first of these will allow you to change the case (alter) of a whole line or range of line numbers. I have already found that changing an all upper case message to all lower case is much easier for me to read. Personal taste prevails here. The .Z command will allow you to take a message that you have prepared for a 40 column system and 'reformat' it for an 80, 64 or 22 (or any other size for that matter) system. The 'formatting' that takes place is limited to the filling of full words to the point of not extending past the right margin. This can come in handy but I would still like to see a center command like in the old ASCII EXPRESS.

Now for all you guys that have found the macros to be almost like a programming language within the program, there are 4 new commands! The first is the 'F'orward a file. This can be used to send a file to the other computer under macro control. You also specify whether you want a line at a time or a character at a time sent and what prompt to look for. The next is the 'M'ultiple resend command. This will send the current macro element the number of times specified after the 'M' and then it will execute the macro element specified at the end of the string. You now have a 'W'rite buffer command so that you can have the copy buffer written to the disk at any point in the macro. There is also an 'X' command that will e'X'it PRO immediately. This would allow you to write a macro to, upon booting the system, call a computer, logon, download information, logoff, write the information to the disk, and drop you back in the Apple operating system if you so desire. Nice.

Now for all you wondering about terminal emulation, with this version of PRO you get tables to go along with the program and they give you a starting point for several different terminal styles. There are 12 that range from Datamedia to Heath to Televideo to Hazeltine. Ought to be enough to have most bases covered.

Now especially for Bernie Fremmerman...it has an INDEX! Just as soon as he got one together

GOTO 23



ASCII Express Concluded from page 22

they were working on it already. It is very handy and thank you Bernie and SDS! There are the basic differences as I can tell them at this point. From working with AE PRO for about a year, I can safely say that there are more things that are not nearly as apparent as these. One of the most noticeable differences before ever getting to the program is the manual. It is up to about 340 pages from the 200 or so of the old version. The extra pages come in the form of more specific examples and documentation on the new features. Mostly it is explaining the existing features in more detail.

In closing, I think that for the first time user of a terminal program this is a much more 'friendly' program than before with all the help menus and with the extended features it might just get quite a few 'old guys' to upgrade. So there you have it and I hope that I have answered the question.... just what IS the difference between the two.



That Time Again

by Steve George

It's time once again to prepare for special disk-handling procedures! Lower humidity levels means that static can quickly become a problem, and you can even more quickly destroy that favorite program if you're not careful. Somebody is even selling a small metal plate which is attached to the keyboard-area with double sided tape and has a small wire running to a grounded screw just under the front edge, saying... TOUCH IT, or something. Wouldn't it be easier to just reach under the keyboard and touch one of the metal screws that holds the computer together? Of course!! This "habit" will drain off the potentially damaging static you've collected before it can do damage to both chips and disks alike.



THE QUESTION:

How can I print out graphics with my Apple?

THE ANSWER:

With the new PARAGRAPH-I card by Techport!

PARAGRAPH-I

PARALLEL GRAPHIC PRINTER INTERFACE CARD

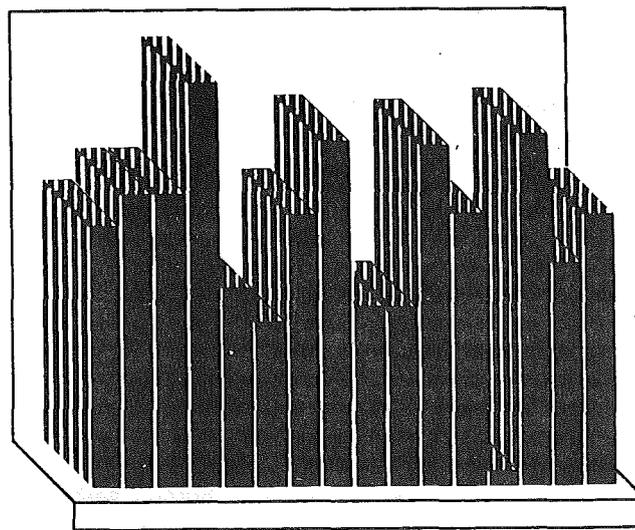
For Apple II, II+ and IIe

(CABLE INCLUDED)

For use with all popular Dot Matrix Printers

DISTRIBUTED BY:

DATREX MARKETING 944-0770



**COMPARE AND SAVE!!
PARAGRAPH-I HAS HIGH END FEATURES
AT A LOW END PRICE!**

Computer King
920-1154

Computerland
All locations

Bit By Bit
646-4833

Onyx Computers
721-1234

Calculators, Inc.
866-8908

City Desk Computer Whse
933-1771

Computers of Woodbury
731-1499

Computer Exercise World
920-7500



Volunteer Thanks

by Steve George

Faster than the president's speeding gavel at the last Board meeting, I was suddenly in charge of coordinating the last two faires Mini'app'les attended.

As you may be aware, we were invited to participate in an information faire sponsored and promoted by Computer User's Dale Archibald. (Dale sent us a nice thank you note. - Ed) It was held at the CDC Learning Center (next to the Metrodome), the first and second Saturdays of December. User groups for the Apple (us!), Color Computer, TRS-80, Osborne, TI, Heath, Atari, Commodore, Morrow, and reps for Epson, IBM, Stearns and the Atom were present.

Quite a showing of user groups & micros! Dale says he feels this may become an ongoing faire due to the tremendous interest generated by these first two. Our primary goal at these functions is to show the kind of support and help an individual can receive from a User Group after buying an Apple.

Special thanks are extended to those who volunteered time and effort: Chase Allen (Pres), Ron Androff (Past Pres), Chuck

Thiesfeld (VP), Hugh Kurtzman (Sec) {Hugh guided me through all of the things a faire involves and was extremely helpful and patient}, Dan Buchler (Editor), Subir Chatterjee (Business), Eric Holterman (Investment), Stewart Haight (Medical), and Dick Marchiafava. Personal Business System's Mike Carlson again volunteered a color monitor for our use. Unfortunately, they sold all the monitors they had! (I hear Monitors make GREAT stocking stuffers!) So, an extra "Thank you" is extended to Loren Ryter for lending us his monitor.

When (not if) the next Info faire is scheduled, more volunteers will be needed. No special knowledge of the Apple is required, just an overall grasp of the types of things it can be used for, types of programs available, and the benefits of Mini'app'les membership need be known. Consider volunteering a couple of hours for YOUR club. As you can well imagine, each of the above mentioned people is busy, too. Yet, each found time to lend a helping hand to this worthwhile project. Next time, how about you too?



IC+ -> //e Update

by Steve George

The binary routines listed in the September issue are correct as published, except that one is a little short. Because the article made reference to \$300, somebody assumed that's where it began... normally a fairly safe presumption. But, no... bytes from \$2D2 to \$2FF need inclusion to drive SHIFTER. They are as follows:

2D2:48 A9 20 8D 7E FD
2D8:18 AD 72 AA 69 2E 8D 7F
2E0:FD AD 73 AA 69 00 8D 80
2E8:FD A9 EA 8D 81 FD 8D 82
2F0:FD 8D 83 FD A9 FF 8D 49
2F8:A6 A9 00 8D 57 A6 68 60
300:as previously printed

If I had known that the programs would be printed instead of on a DOM, I would have also told you the lengths for each program for saving them:

BSAVE SHIFTER,A\$2D2,L\$C1
BSAVE RAM.FP,A\$6000,L\$E0

Besides saving you all of that typing (HEX numbers, ugh!), the DEMO program would have examined your Apple and automatically checked for a 16k card, etc.





RFP

REQUEST FOR PROPOSAL CONSUMABLE RECURRING PURCHASES

by Ken Slingsby

Mini'app'les is now accepting proposals for the supply of consumable products to be used by the membership. The proposal period will be the period of time from the publishing of this notice until Feb. 6, 1984.

The proposal shall be secured on a yearly basis for such consumable items as the club members may wish to purchase at a bulk rate. That bulk rate and brand shall be made available for a minimum of 6 months, after which time and up to one year either the Coordinator or the board may direct that reconsideration be made. The Coordinator shall not have any financial or other involvement in the bids or bidding process. Final approval on the proposal and any reconsideration shall be made by the club officers.

product. Orders may be taken at one meeting and delivered at subsequent meetings if the product or demand so warrants, but only if this has been agreed upon in advance and was part of the accepted proposal. Authorized vendors shall be present or represented at all club meetings at both the main and branch levels. It is realized that the demand and other factors may be difficult to anticipate. This is the reason for the six month minimum period of organization. However, any abuse of the right to sell at club meetings may be reason to consider revocation of the right at an earlier time.

This policy has been set up for the convenience and benefit of club members. It is not intended to limit competition or to put the club's stamp of approval on any product, brand, company, store, etc. It is recognized that only a very small number of specific products and/or brands will be represented by the authorized vendors. For this reason the club expects to accept bids on a yearly basis for consumable products.

MINIMUM INFORMATION OF PROPOSALS TO SELL CONSUMABLE PRODUCTS

1. Name
2. Company Name (if appropriate)
3. Product
4. Brand
5. Price
6. Return Policy
7. Other information the vendor may deem appropriate indicating how his product, brand, company or himself would be of service to the Mini'app'les club members.

DEFINITIONS:

CONSUMABLE PRODUCTS

For the purpose of this bid consumable products are those that an Apple computer user might reasonably expect to purchase from time to time to maintain the usefulness of his equipment. Some examples of consumable products are floppy discs, software, paper products, printer ribbons, print wheels, etc. Examples of items not considered consumable products are items which are expected to have a long life, including but not limited to disc drives, printers, keyboards, etc.

GUIDELINE FOR VENDORS OF CONSUMABLE PRODUCTS AUTHORIZED TO SELL AT Mini'app'les CLUB MEETING

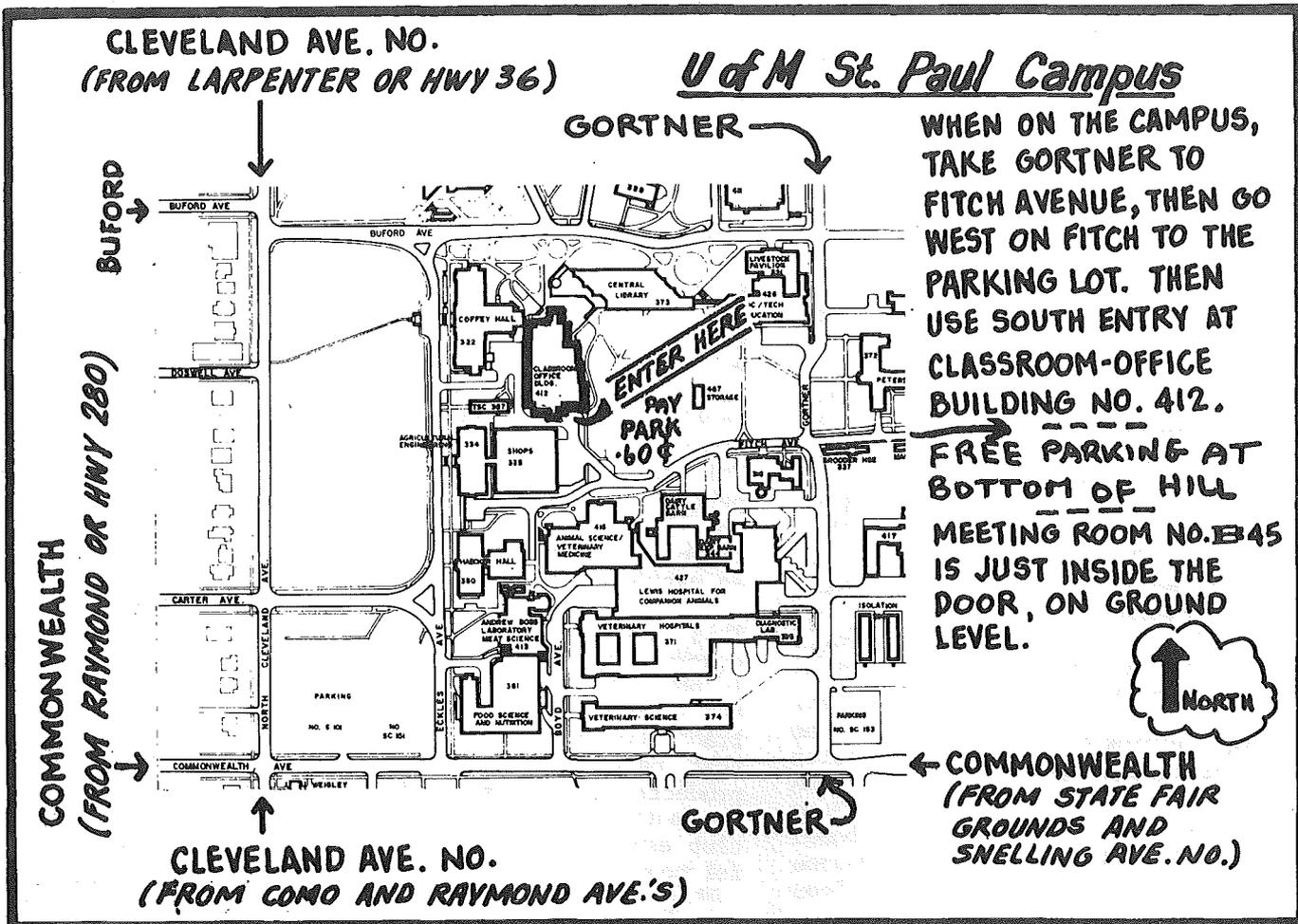
AUTHORIZED VENDOR

The term Authorized Vendor is used to mean only that a specific person or organization has been given the right to sell a specific product and brand at a specific price to club members at club meetings. No other meaning is expressed or implied by the phrase Authorized Vendor.

The Mini'app'les club assumes no financial or other responsibility or guarantees to authorized vendors or club members. Any transactions shall be between the vendor and the club member. Club members who have complaints about authorized vendors may relay them to the Coordinator for consideration of revocation of the vendor's right to sell at club meetings or further review of proposals. No signs, posters or other advertising may be displayed at club meetings. Announcements as to the availability of products may be made by the person conducting the club meeting, if necessary. Other advertising (such as in the club newsletter) may be done through normal channels without special consideration.

GOTO 7

Authorized vendors are expected to attend the club meetings with a reasonable supply of the



Classified

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.

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

GAME EXCHANGE - for
Information send name &
address to AP-X, 2524
Aquila Ave. S., St. Louis
Park, MN 55426

Mountain Hardware Apple
Clock. Best offer.
Gary Goldsmith 871-3903
729-7189

Disk Drives! 2 new TDS
"Micro Drive", 1/2 height,
160K, Teac mechanism, \$200
each. 2 Rana Systems
Elite 3, 640K, \$400 each.
2 Rana Systems Disk
Controllers, \$50 each.
Scott 623-3749

For sale or trade - D.C.
Hayes Modem or MPI printer
for Apple Cat II modem.
Frank 894-1020

Apple Silentype Printer.
Uses thermal paper and
includes Interface card.
New - \$450, but asking
\$198.
Barry Miracle 788-0716

I have a new Epson FX-80
Tractor Feed for which I
have yet to discover a
use. \$30 for the unit.
Call Mike at:
726-2851 6 to 11 PM wk day
eves or (507) 263-3801 day
and weekends

Software Bargains : Many
programs available - call
for availability.
Examples - Midnight Magic,
Bug Attack, Outpost, Space
Eggs, Beer Run, Pinball,
Cyber Strike, Twerps,
Hyperspace Wars - \$5 each;
Olympic Decathalon, Star
Blazer, Mission Asteroid,
Epoch, Missile Defense,
Odyssey, Ulysses,
Tumblebugs, Checkers,
Threshold, Free Fall,
Bandits, Chequemate -
\$6.00 each; Learning
Company programs \$10 to
\$12, and many others from
\$1.90 to \$4.00. Mail
order add \$1.50 per
order.
Call Pat or Gene 941-5490

Applewriter II, unopened
with full warranty. Make
offer.
Steve 935-5775

New Multi-Tech Modem II by
Multi-Tech Systems Inc.
Designed for use with an
Apple II or Apple II+ or a
Bell and Howell computer.
Suggested retail - \$369.
Will sell for \$100.
Dave Haycraft 507 451-0357

Apple II+, 48K, 2 disk
drives, Microsoft SoftCard
CP/M, Microsoft COBOL &
BASIC, Epson MX100,
Diskettes. Used by
professional only. Best
Offer!
698-8149 (eve)

ATTENTION:



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.

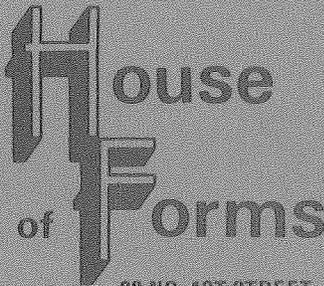
OPEN MONDAY thru FRIDAY - 8:30 - 5:00

NOTE: New Hours 

NEW!
In-Stock
Continuous Postcards,
Index Cards and
Micro-Perf Printer Paper

For more information call:

(612) 332-4866



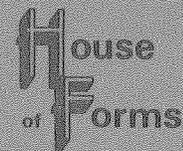
20 NO. 1ST STREET • MINNEAPOLIS, MN 55407

SAVE THIS COUPON!

THIS COUPON ENTITLES MINI'APP'LES MEMBERS TO A

10% DISCOUNT

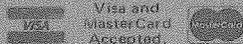
ON ANY PURCHASE AT

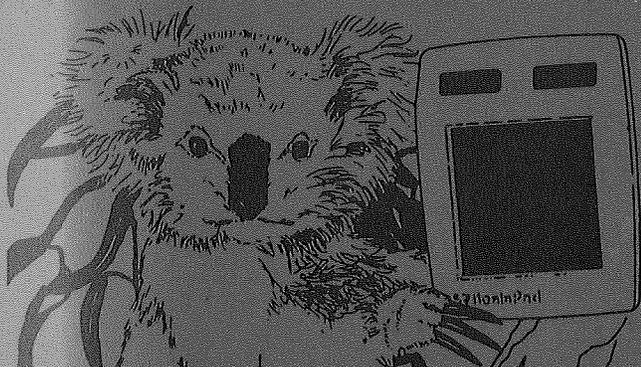


This Discount Will Not Apply
On Sale Merchandise
Or With Other Discounts.

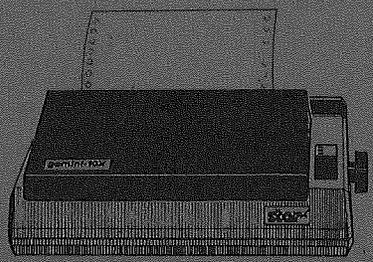
Expires June 30, 1984

20 No. 1st St.
Minneapolis, MN 55401





KoalaPad™ \$69.95



Star
gemini 10X

\$249

with grafstar parallel interface \$349

A full featured dot-matrix printer with authorized sales & service

1984 INVENTORY REDUCTION SALE !

VISIT OUR STORE FOR SAVINGS ON THESE ITEMS. PLUS 50% OFF MFG. PRICE ON ALL SOFTWARE IN STOCK.

LIMITED SUPPLY ON MOST ITEMS. SO SHOP EARLY FOR SAVINGS.



INFORUNNER RITEMAN PRINTER NOW ONLY \$349



Kennington System Saver \$69.95



elephant disks
single sided, single density

10 — \$ 18.87
40 — \$ 69.00
100 — \$165.00

elephant trunks
50 disk storage
\$18.87



yukon computer
9925 lyndale avenue south
bloomington, mn 55420

STORE HOURS
9 am — 5 pm
Monday-Friday
888-8987

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

-28-

1 241 12-1-83
SALO, BILL
R.R. 2 BOX TT 8
ROCKFORD MN 55373

Bulk Rate
US Postage
PAID
Hopkins, MN
Permit 631

3