mini'app'les

apple computer user group newsletter

VOLUME VI No 8 AUGUST 1983

CALENDAR WHICH	CALENDAR WHEN	CALENDAR WHERE	CALENDAR WHAT
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 inside	**WEDNESDAY August 17th** Prgm-7:00pm SIGS-8:30pm+	EISENHOWER HIGH SCHOOL, Highway 7 near 12th Ave Hopkins.	**Jim Marty**, of the Science Museum of Minn. on their Robot Project. (Apple Driven)
Investment SIG	Wed Aug 17	After Regular Mtg.	Note 4
Medical SIG Note 13	Wed Aug 17	After Regular Mtg.	Health Risk Appraisal Program Demo
Education SIG Note 12	Thu Aug 18	St. Louis Park Cen Comm Ctr 6300 Walker St.	Software Demos See announcements.
VisiCalc Note 9	Tue Aug 23 7:00pm	PBS 4306 Upton Ave S.	
Minnetonka Branch	Wed Aug 24 7pm-10pm	Glen Lake Comm. Ctr. 14300 Excelsior Blvd	**Chuck Boody** on Music Note 8
CP/M Note 5	Wed Aug 24 7:00pm	Minnesota Federal 9th Ave S Hopkins	
St. Paul Branch - Note 3	Tue Sep 6 7pm-10pm	Mahtomedi Fire House Hallam & Stillwater.	**Bruce Fellows** Voice Box speech synthesizer.
Pascal Note 1	Wed Sep 7 7:30pm	Minnesota Federal 9th Ave S Hopkins	Regular Regular **Pascal** Special Interest Group Meeting.
Business Note 10	Thu Sep 8 7:00pm	Minnesota Sch of Bus's 11 S 5th, Mpls	SoftGraph by Ken Ruzik.
Dakota County Branch	Tue Sep 13	St. John Neumann Church	Cancelled because of Board meeting - Note 7
Board Meeting Note 2	Tue Sep 13 7:30 pm	Norwest Bank S 1st St., Hopkins	General club business. Meeting is open to all members.
Twin City Computer Show	Sep 15 - 18	Minneapolis Auditorium Note 6	MicroComputers and lots of Apple stuff.
REGULAR MINI'APP'LES Note 2 Map next issue	**WEDNESDAY Sep 21st** Prgm-7:00pm SIGS-8:30pm+	UNIVERSITY MINNESOTA ST. PAUL Room B45 Bldg 412 Near State Fair Ground	Computer Professionals will demo Apple **Lisa**

Notes: (See page 2 for telephone numbers.)

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

MINI'APP'LES

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

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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 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

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Coming in September!

A series of Special DOMS containing professional quality software. These DOMs will be sold to members at low prices. Among the first few disks will be:

- Mail list program.
- Home accounting package.
- Higher Text with utilities.
- An expanded Applesoft.
- Machine code utilities.

*** APPLE SERVICE!!! *** PARTS/CABLES TOO

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APPLE DRIVE	$ 30.00	$ 45.00	heads, motors, other
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CBM1541	40.00	55.00	custom chips, NOT included

ADD $ 10 FOR DOUBLE SIDED. Hard Drive service/sales, Call

Apple CARDS prntr/disk/RAM	$ 30.00	includes parts.
Apple Motherboard Repairs	45.00	Includes parts except ROMS
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CABLES Many cables/conns stock: LONG disk cable (4') $15, 2/$25
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Tues., Wed., Fri., Sat. 10 a.m. to 6 p.m. • Closed Sunday

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SOFTWARE™

ANNOUNCEMENTS

Mini'app'les Meeting Places

Please note that the August meeting will now be held at the Eisenhower school in Hopkins, not at the Science Museum as announced last month. 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, please contact your newsletter editor as fast as possible. The deadline for submission is August 5th.

Twin Cities Computer Show (TCCS)

The TCCS will be in the Minneapolis Auditorium Sept. 15th thru 18th. Although not an AppleFest (show dedicated to Apple compatible equipment and software), it promises to be an event every Mini'app'les member should attend. The show is not so much a manufacturers' convention, but rather a supplier/retailer exhibition at which everybody is trying to outdo everyone else with dazzling products and often low prices. Be prepared to spend money, and you usually won't regret it.

The club, as last year, will have a booth. Members are invited to participate in booth duty. Duty periods last 3 to 4 hours and are either in the morning or afternoon. We particularly need persons during day-time on the Thursday and Friday. To qualify, you must have been a member for at least 6 months and have attended a few club meetings and branch meetings so that you have a feel for the way the club works. If you are interested, please call Dan Buchler at 890-5051 no later than August 14th.

Motion from the Floor

At the officers' meeting of June 8th, it was agreed that members attending open board meetings, who wished to make a motion, should put that motion in writing and hand it to the President before the meeting. This will allow the item to be placed on the agenda.

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 Schoeppner or Hugh Kurtzman for our current mailing philosophy.

Doms by Mail

New Service for Mini'app'les Members

by Chuck Thiesfeld

Now members can order DOMs 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

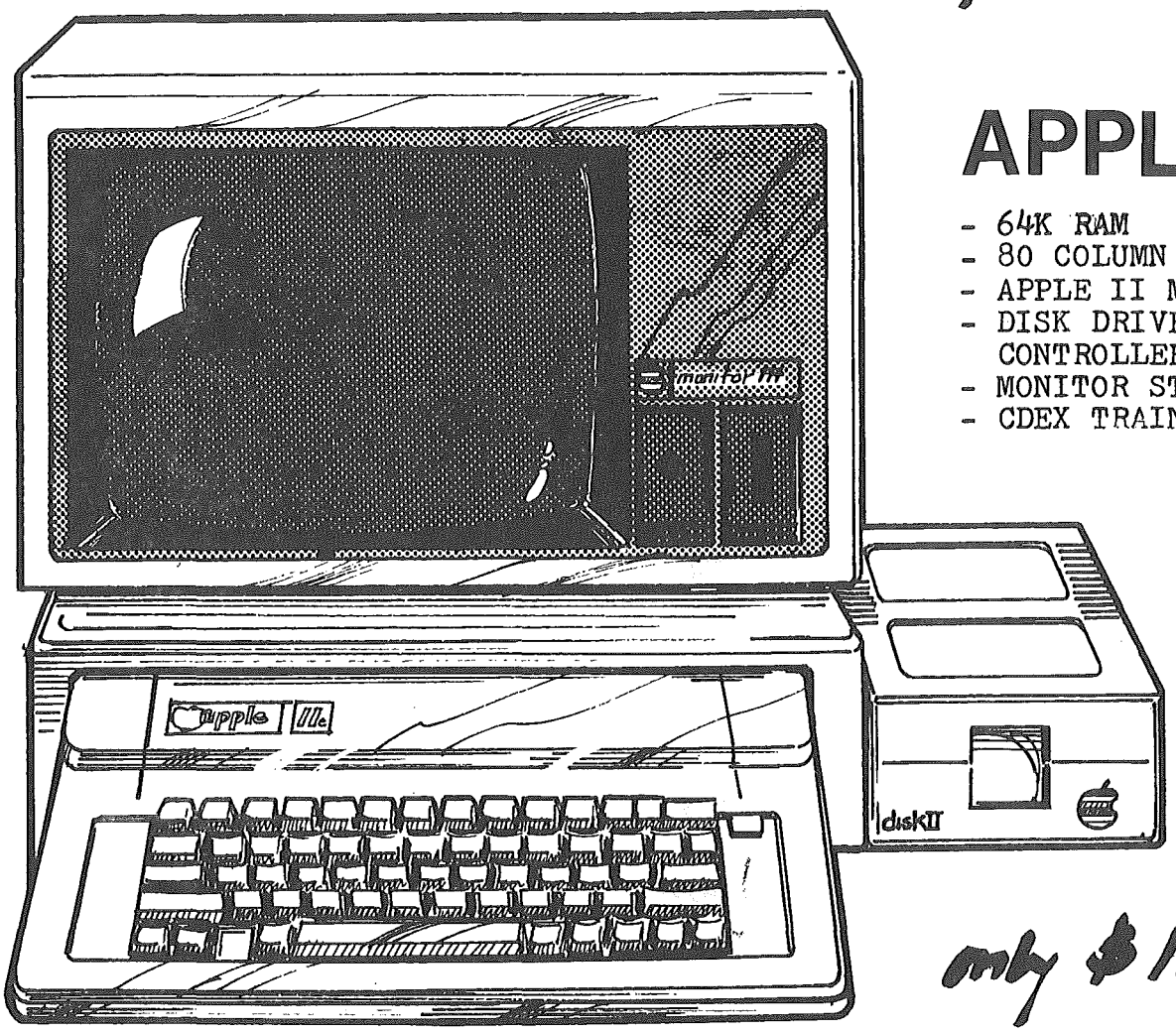
Please allow 60 days for delivery in USA. Incomplete packages will not be returned. DOMs 1 thru 23, except 18, EAMON #3, and 8 Pascal disks are currently available. General questions about DOMs should be addressed to Terry Schoeppner. Questions on DOM content should be addressed to Al Peterman, our DOM editor.

Please note that DOMs may also be purchased on club-supplied media by sending $7.50 to the software sales coordinator. See inside front cover. Also, the latest DOMs are available at regular meetings, and at some Branch meetings, for sale to members at $5 each.

GOTO 7

Note The logo at top of each page was printed using D. Buchler HIGHER PRINT program and a LOGO Font.

Computer System For Today's Everyone



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- TEAC SLIM/DIRECT DRIVE	$ 299.00
- DATA DRIVE	$ 275.00

Onyx Computer
2701 EAST LAKE ST.
MINNEAPOLIS. MN 55401
612-721-1234

Announcements Continued from page 5

Business SIG

by Subir Chatterjee

The Business SIG met on July 14, 1983, at the Minnesota School of Business when Scott Ueland demonstrated VERSAFORM. With this package, the user has the ability to customize the screen to look like forms used within the business. Once set up, the screens can be used for data entry with file handling being handled by the program. Output screens, created by the user, are used to provide reports: these include selective records with subtotals, sorted dumps of selected data, computed fields and fields requiring 'lookup tables'. There is also the ability to introduce range verification & 'ckecksums' during data entry. The documentation has been described as being 'outstanding' - InfoWorld reviewed the package on November 8, 1982. Our thanks to Scott on an excellent presentation. (Scott will be submitting a review of Versaform - see next month's issue.)

The next month's meeting will be a six part seminar held on Thursday, August 11, 1983. The purpose of the evening will be to introduce various concepts related to the business use of microcomputers.

The theme of the meeting will be ' An Introduction to Business Computing' : the program is designed for two groups of people - those who are contemplating the use of microcomputers in business and for those who own microcomputers in their business and would like to increase its productivity.

The format for the evening is such that there will be six different topics being discussed simultaneously at each of 3 sessions. Our host, David St.George of the Minnesota School of Business, has kindly offered to make available rooms for the evening, 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

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 carpark adjoining the building and at the car park across the street by Butler Square. Street parking is also availible.

The meeting will start at 7:00 p.m. with the first 20 minutes devoted to a general question & answer period. The main program will commence at 7:30 and finish shortly after 9:00.

The following month's meeting will be held on September 8th at the Minnesota School of Business, when Ken Ruzik will demonstrate business graphics using SoftGraph, a public domain graphics package costing $ 8.00 (!!) from Softalk. The program being demonstrated by Ken has been extensively modified by him, and is quite incredible! Al Peterman will also demonstrate a novel graphics tablet called Kaola Pad - priced at approx. $ 120.00, it is really remarkable. (A review appears elsewhere in this newsletter - Ed.) Other Graphic Pads have cost around $ 500, and this package seems easier to use.

At the request of some members, we will again develop a directory of Business users. The directory will be a resource to SIG members indicating hardware configurations, software expertise, etc. As is standard club policy names, telephone numbers and equipment information will be published - no addresses will be divulged. The questionnaire will appear in a subsequent newsletter and copies will be forwarded to those who sent in replies!

Investment SIG

by Eric Holterman

After our July break, we will meet again in August, as one of the cluster groups following the main program at the Regular Meeting on August 17. Part of the meeting will be for questions and answers, hopefully, for new and prospective members. Demonstration of a program (not yet chosen) will follow. Check the calendar for Regular Meeting time and location.

Our September meeting at the regular meeting time and date would conflict with the Twin Cities Computer Show, and we may alter the schedule again. The time and place is not yet selected, so check the September newsletter for details.

GOTO 8

Bulk Purchases

Bulk Purchase Plans

Bulk purchase arrangements are occasionally 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 any way. A small handling charge to pay expenses may be 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.

Note on Keyboards offered for bulk purchase.
by Dan Buchler

At the July Mini'app'les meeting, the designers of the Omegaboard II demonstrated their product, an add-on keyboard for the][and][+. Larry Mingus of Zicor Inc. gave a terrific demo which seemed to be enjoyed by all present. Earl Benser was also there with his personally owned EPS keyboard. This provided a forum in which one could compare the two products.

Both are relatively expensive, with list price around $400. Both offer lots of function keys, high quality construction and bells and whistles.

The EPS depends on pre-programmed plug in ROMS (that look a little like ATARI game cartridges). They offer a ROM for each of the 7 most popular word processors with 3 more coming in December, and for 4 Spreadsheets.

The OmegaBoard II people offer a combination of preprogrammed ROMs and direct programmability from your Apple. You can download a key function.

Bulk Purchase of OmegaBoard II Remote Keyboard
by Larry Mingus

Zicor are offering a bulk deal to sell the OmegaBoard II at less than $300, if 25 Mini'app'les members order together. Call Zicor at 731-1762 if you want to put on the list.

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. Details were published last month. If you are interested, there may still be time when you first read this announcement.

For more information, call Earl Benser, 884-2148, evenings and weekends. The order close-out date was 1 August, 1983.

Bulk Purchase of PRINTER BUFFER
by Eric Holterman

While the deadline for the printer buffer bulk purchase is now past, there may still be a chance to participate. If you are interested call me at 454-5628 right away. Also call for information on serial versions of the BPO and EBI. I can't guarantee that additional buffers can still be ordered (this is being written on July 7), but if you are interested, don't wait until the Regular Meeting on August 17.

Announcements Continued from page 7

Education SIG

by Jane Chatterjee

Our August meeting will be on August 18th, at 7:00 pm. The meeting will be held at:
St. Louis Park Central Community Center,
Computing Facility
6300 Walker St.
St Louis Park.
(just north of Hwy 7, about 1/2 mile west of Hwy 100). The facility has 10 Apple //e's , so you will be able to try the software, rather than just see a demo. We will have available for your use the word processor Bank Street Writer. This is a simple to use and inexpensive word processor, suitable for home or school use. We also expect to have a Koala Pad for you to try out.

A review of the Pillsbury EAT SMART educational program (the subject of our June meeting) appears elsewhere in this newsletter.

Jane Chatterjee 888-9447
Janelle Norris 920-1430
Jeanne Walsh 753-3204

GOTO 21

Eat Smart

A Software Review
by Jane Chatterjee

Mini'app'les Education SIG

Program Type:	home economics, nutrition, health
Grade level:	7th grade and above
Hardware:	Apple][+, 1 disc drive, DOS 3.3, printer optional
Cost:	$19.95
Available from:	Consumer Public Relations, 3286-D Pillsbury Co., Pillsbury Center, Minneapolis, MN 55402.

Computing Teacher Recommendation: A best buy.

The program was evaluated by members of the Mini'app'les Education SIG, at their June meeting at St Louis Park Community Computer Center.

The program performs an entire day's dietary analysis for the user. It can be run in conjunction with a printer, when the analysis is printed out, or simply using the screen displays. The program makes excellent use of the computer's number crunching ability. It also provides an interesting and informative exercise to perform.

The program is accompanied by excellent documentation, including Teacher's Guide, various types of Student Worksheets, and Nutritional Data. The program is unlocked, so is easily modifiable by the teacher. It is oriented toward school use, but is also appropriate for use in the home.

The program provides a good balance of on and off screen activities. It is easily adaptable for use by a whole class and has a class tally facility.

The user is first classified by age and sex. Then he works through the whole day, typing in food consumption at breakfast, morning snack, lunch, afternoon snack, dinner, evening snack, by food identification number and helping size. The program provides an analysis of each food according to protein, calories, 5 vitamins and 2 minerals. Totals are supplies for each meal, and the whole day, in this case also including sodium and cholesterol consumption.

At the end of the exercise, suitable comments are supplied, to help the user identify areas of food consumption needing to be modified.

The only criticism of this program would relate to the relatively unsophisticated design, leading to the use of scrolling, slow loading, and difficulty of correcting typing errors.

As an educator, I would like to see the food worksheet contain more generic items from which to construct meal dishes. Better still, would be a much larger, disc based food database.

Overall, however, the program is a very useful one for a school or home program library, and it is excellent value. With suitable exposure, I think it could become very popular.

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

THOUSANDS OF COMPUTERS ARE GATHERING AGAIN IN MINNEAPOLIS

If you've been thinking about buying a business computer, a word or data processor, a video game or a personal or home computer, The Second Annual Twin Cities Computer Show being held at the Minneapolis Auditorium is the place to go to compare all the makes and models.

The Computer Show offers you the opportunity to learn about, try out and compare nearly five thousand different products including computers, accessories, peripherals, services and an incredible array of software packages, in a non-intimidating, no-obligation, fun-filled atmosphere. If you decide to buy at the Show, you'll save hundreds, even thousands of dollars because everything that's on display is for sale at super show prices.

The Show's nearly three hundred displays feature all of the hardware and software made for every major computer for business, industry, the professions, government, education, home and personal use. The show is open to the public, and admission is $6 for adults, $3 for children.

Thursday-Sunday
September 15-18, 1983
Show Hours:
Thursday-Saturday
9:30am to 5:30pm
Sunday
11am to 5pm
Minneapolis Auditorium
Third Avenue
Minneapolis, MN

THE TWIN CITIES COMPUTER SHOW
AND
SOFTWARE
EXPOSITION

For more information about exhibiting or attending call or write: National Computer Shows, 822 Boylston Street, Chestnut Hill, Mass. 02167, Tel: 617-739-2000.

DOM #26

August Disk of the Month
by Alan Peterman

This month's DOM is actually the International Apple Corp disk #26 that I have decided to release in its entirety. This is due to the I.A.C.'s scheme of putting enough good documentation on some of their disks so that my job becomes quite a bit easier. Also, by the time I fixed the catalog to eliminate all the INVERSE listings (that cause printers to go into spasms), and getting rid of all the other cute 'enhancements' with which the the IAC dress up their catalog, I decided to leave the programs as they were.

At any rate, you are getting some programs and systems donated to the IAC from other member clubs. For those of you who might not know, our DOM #15 was released in its entirety by the IAC as one of their disks, so don't think other clubs aren't suffering through our programs.

From the Apple Fritters of Rhode Island, we have a system of programs that work with the Rubik's cube. The programs **WILL NOT** solve a cube, but they are nice for playing around with one, and for seeing the use of CHAINING within Applesoft programs.

The Brasil Apple Club has given us some Integer programs and a short file that will run Integer on a 48K Apple II+. The programs include a cute short disk space program, a program that gives the length and address of binary files, a very nice menu program and a program to delete all unlocked files on a disk. As a comment about the last program, it may be interesting to some of you to know that the Apple DOES NOT really delete the information on the disk when you DELETE a file. All the DELETE command does is to mark the directory entry that the file has been deleted. Until the sectors the file used are written over, or the directory information is covered by writing a new file name over it, the file exists and can be recovered. This has some possibilities for loss of security of important data. By the way, when you give me programs for DOM's, I don't always undelete old files....

The Maryland Apple Core is represented by a couple of calendar programs, one of which has a reminder system built in. It could be handy for keeping track of all the Mini'app'les meetings. They also have given us a HIRES shape generator system with extensive documentation and a label printing program that will print multiple labels (after you fix line 210 to put your printer into the proper mode). There is a memory dump program that will dump any section of memory (note specify 'P' for printed output and 'X' to end) and a program called FINDER that doesn't seem to work. We can use it and its documentation files as a puzzle for you to figure out how it works, what it does and why it doesn't! (Maybe the DOM Editor can be persuaded to offer a prize for this endeavor! - Ed.)

Lastly, there are some programs from the Erie Apple Crunchers. The most useful is a program to MASTER CATALOG multiple diskettes. While it isn't as good as the old program from Programma International, it is quite useful for organizing your diskette library. It does have an entry mode that allows one to enter manually data for non-catalogable disks. There is a sort option, albeit a slow one, and a separate printing program to give you hardcopy reference to your disks. They have also given out a checkbook balancing/analysis program that is rather comprehensive for those of you who want to keep track of your funds. Finally, there is a neat hello program and a couple of logic games to keep the old synapses lubricated.

As may be evident, there is now a fair amount of public domain software that is becoming available. I am attempting to pick out some of the best for future DOM's. Also the IAC is releasing more good software (they seem to be getting more selective also). With these sources and the continued influx of programs from our local members you can look forward to more and BETTER DOM's in the coming months.

Daisy Wheeling

by Arsen Darnay

Follow-Ups and Such

When I moved to this region of the country, I read a brochure put out by the City of Minneapolis to the effect that Minnesota's paradisical climate only produces at most four or five days of severe humidity each summer.

I've volunteered to rewrite that brochure but haven't heard from the City thus far.

But I've let you in on this so that you'll know my excuse for not producing some humorous masterpiece this month. Instead, I will content myself with some notes on miscellaneous topics.

Item. The producers of the Format][word processing software have issued an 'enhanced' version of the package. The enhancements make Format][easier to use and much less demanding of diskette space. Here are some features of this latest version:

- The diskette is no longer protected. You can back it up or put it on a hard disk.

- 'Pages' are stored as DOS text files now rather than as binary files. You can thus put Format][files onto any diskette, not only on those 'dedicated' to this software.

- The software relabels your files so that they read TEXT.FILE NAMES.01 — whereby the file name may be up to 10 characters long; if shorter, the software pads it with spaces. The number following the second period is the page number. This feature is unnecessary, in my opinion, and makes it more difficult to read Format][files into another word processor — but better this than converting binary to text files by using a utility.

- Up to 50 'pages' can now be stored on a diskette (up from 18).

- The system will run on Apple II+, Apple //e, and the Franklin as is — which is a nice feature if you are planning on changing hardware.

- A number of printing 'installations' can now be stored and called up from the master diskette; and you no longer need the utility diskette for working with proportional spacing tables.

A number of keyboard commands have been added or modified -- all improvements. But going to the start of the text is still bothersome (3 keystrokes).

Format][is an excellent system, in my opinion, but it is 'cranky,' by which I mean that the authors think technically rather than commercially. You would think that if they give you a CTRL-E command for going to the end of the text they'd give you a CTRL-B command to go to the beginning of it (as Apple Writer sensibly does). No such luck. CTRL-E to get to the end. But to go to the start, you have to enter Edit mode and press S for start and then tell the machine whether you want to go to the start of the Line, Paragraph, Text, or All.

Item. I read in Call-A.P.P.L.E. two items about Apple Write II to cheer and sadden.

The cheery part is that the new Apple Writer (for the Apple //e) has been improved. To wit, the cursor no longer resides between letters but, instead, sits on top of them when you edit — with the consequence that the text no longer moves around disconcertingly when you run around on the screen.

Other changes involve the elimination of the ESC-I-J-K-M cursor moves and changes in the Erase and Copy modes of the arrow keys.

The sad part is that Apple Writer][, which I happen to own, won't run on the //e — and hence to make the upgrade I'll have to fork over around $200.

Item. Since reporting on THE Spreadsheet 2.0, I've used it quite a bit and then, after transferring many records to it, I've moved them right back to THE Spreadsheet 1.0 again, disappointed by the 'new' and humbly appreciative of the old.

The problem, for me, identified and well described by John Hansen (Mini'app'les, June 1983), is that the screen display lags behind cursor moves to an extent that I find unacceptable.

This problem shows up especially in 70 or 80 column mode, but I get hints of it in 40 column as well. Since I got the system in the first place to have an 80-column display, the exercise was a failure. For me. Others, not accustomed to the speed of Spreadsheet 1.0 or Visicalc, may not mind so much. (Editor's note: in next month's newsletter we will be publishing a detailed timing analysis of the various spreadsheet programs.)

Daisy Wheeling Concluded

Another feature that bugged me was having to use the space bar to change the direction of the cursor's movement. Visicalc, on the Apple II+, also requires that procedure, but since I use Visicalc only on an IBM, that feature hadn't bothered me before.

Lloyd Thiesfeld, who reads our newsletter in Houston (!), called to say that he had made THE Spreadsheet 2.0 work on his Sup'R'Terminal. He had sent the card back to M & R Enterprises. They upgraded his card to the latest revision free of charge. After that, the card worked fine on this software package.

I tried his procedure but couldn't make my card do what it was supposed to. I should send mine in too, I suppose, but for all my complaints about the Sup'R, I don't think I could get along without it for any length of time. Besides that, I dread the chore of ripping it from the motherboard.

The most recent issue of Call-A.P.P.L.E compares THE Spreadsheet 2.0 to various other spreadsheet programs. Reading that article, you'd never suspect that THE Spreadsheet 2.0 might have even a wee little bit of a problem with speed of display. I was suprised to see that A.P.P.L.E. would publish such an account without at least footnoting the problem and confession to self interest.

Item. After reading Dan Buchler's review of the C. Itoh, I bought myself the Model 8510A which is described in the June issue.

I am very pleased with it. It is amazing what a difference speed makes. My Smith-Corona TP-I makes wonderfully nice-looking letters — very slowly and with a great deal of noise. The C. Itoh is a flashing dream by comparison . . . and working on it in my Prowriter T-shirt has reconciled me a little to the humidity.

The manuals, in my opinion, are lousy. The tutorial volumne must have been written by the same fellow who wrote the Epson tutorial some time back. The text is written for TRS-80 users (which doesn't bother me). What does is the cute tone and the absence of explanation in precisely those areas where you need help — such as how to make a mixture of Elite, Pica, Elongated, Elongated-and-Compressed typefaces stick to the same margin settings.

The 'technical' manual, by contrast, is very technical and very 'Japanese,' i.e., you can almost feel the cultural difference.

A lot of documentation for the micros seems to run this way: Third-grade level but inadequate tutorial materials and Ph.D. or 'hacker' obscurity in the technical stuff. And nothing for the guy who is somewhere in between.

Is it any wonder, then, that people either remain computer-shy or become hackers?

I've begun to penetrate some of the C. Itoh's obscurities, so if you need help or commiseration (that's what you'll probably get from me), give me a call.

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Koalapad

by Earl H. Benser

A Review of the KoalaPad Touch Tablet
Produced by Koala Technologies Corp.
Los Altos, Ca.

In the July issue of Mini'App'les, there was a comment that the KoalaPad was the greatest graphics tool since sliced bread. I'm not a major graphics nut, but for a long time I have been trying to figure a way to get the Apple Graphics Tablet (FCC to the contrary). The price, even at cost, however, was more than the wallet would bear. So when I saw this first response to the KoalaPad, I had to at least give it a look. Some look... I watched one in action for about five minutes and then bought it. That was the beginnings of a rough evening. It was about 2 A.M. before I got too tired to continue playing with it.

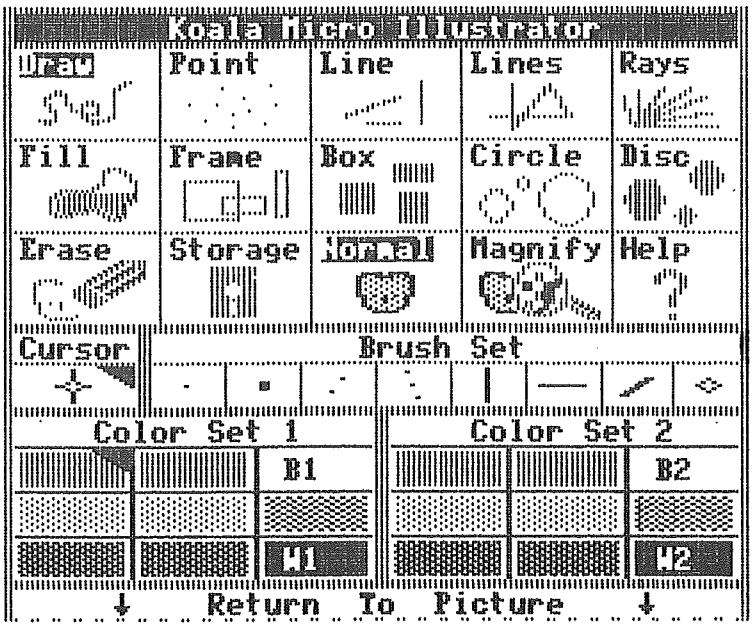
In a nutshell, the KoalaPad is a 4 inch or so square touch sensitive surface which translates the position of a special stylus (or your finger) into position codes for input into the game port. It is essentially a 'solid state' joystick. That's nice, but with the software that comes with the KoalaPad, you can do amazing graphic details.

When the software disc boots, it places a graphics menu on the screen. (Please use a color TV or monitor, b&w just doesn't do it justice.) The items on the menu are selected by using the KoalaPad to position a displayed cursor over the item of your choice, and pressing the left control button (PB0?). The menu provides various point and line drawing options, with various "brushes", to generate straight and freeform lines, options to generate square and circular frames, with and without filled interiors, an option to fill the interior of a drawn irregular area, and both "erase" and "store/load" options. Graphic can be done on the normal full screen, or on a 7X magnified screen. Two sets of colors are provided, with nine colors each, which can be used for any selected draw or fill mode. In the "erase" option, the erased screen can be left solid with any of the 18 colors available (actually 16, since black and white are common to both sets).

For the most part, the KoalaPad just lets you do your thing, the way you want to do it. Within a few minutes of starting, the operation of the KoalaPad and the menu become almost second nature. And it's all too easy to start dreaming of becoming a digital Rembrandt. (Now you also begin to wish that Apple had superdetailed graphics capability.) One of the first lessons learned appears to be that certain color options don't necessarily go well side by side. Strange colors can begin to show up at the boundaries, due to Apple's color coding techniques. Also, when you want to fill areas on the screen, the first color works, but trying to overfill with a second color works sometimes, and sometimes not. There appears to be a priority sequence that I haven't quite figured out yet. (Maybe I should take time to read the instructions?)

Speaking of instructions, they are brief, but effective, and not really necessary. It's very easy to get the hang of the functions just from playing with the KoalaPAd, and everyone will do that.

The KoalaPad will work with any graphics image available on disc, no matter what the source. It can be used for titling, but I would suggest using another program, such as the Beagle Bros. version, for text work. With the KoalaPad, in the 'magnify' mode, it takes very steady nerves to get the letters aligned and proper.



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Strictly for Beginners

by Jo Hornung

My apologies for having no words in the July issue. I **did** write a column (Honest! I have the hard copy to prove it) but it somehow got zapped, which we didn't realize until we were putting the issue together, and it was too late to do anything about it.

Much to my dismay and renewed frustration, I determined later what had happened — the lack of a comma caused the program to be stored on the wrong disk! Until I figured that out, the most logical explanation seemed to be that it was The Force, successfully accomplishing two goals:

(1) to teach me the folly of not making a back-up copy, and

(2) to keep me humble.

The truth is, I was "showing off" in that ill-fated July column. I had learned how to do underlining and boldface, using Apple Writer II and Prowriter, and, being an exhibitionist at heart, I went even farther and did **both**, at the same time! (See, I just did it again!)

For a while I thought maybe I had inadvertently included commands to make the whole thing disintegrate on the sixteenth of June. In any event, I plan to re-do and update that column for the September issue.

Meanwhile, we have had some input from members which we'd like to share with you.

This came from J. A. Howe, on using Apple Writer II on the Apple IIe: "Hit '↑' and a 'U' will show on the data line where normally the 'E' or 's' shows. Now the shift key works normally. '↑' toggles mode every time it's pressed. The 'U' also stands out with print parameters."

Thomas W. Segar wrote that he had found help in using his Apple IIe and Apple Writer IIe with his Epson FX-80 in a book called **Minute Manual for Apple Writer II**, ordered from

Minuteware
P.O. Box 2392
Columbia, MD 21045

for $7.95, plus $2.00 postage. He said a new book for Apple IIe is to be out shortly, but meanwhile "the satisfaction that this II book brings is worth the price for whatever Apple you have."

We've also had a few other calls and notes which we've tried to dispatch by putting the questioners in direct contact with knowledgeable help.

So, the offer to try to find help continues. If you have suggestions for anything else--any problems—you'd like to see addressed in the September issue (or later), please call me (922-7665).

Parents Help Access Apples

by Barb Kostial, Maggie Corens and Jo Hornung

Parent volunteers got into the act at the Widsten Elementary School in Wayzata during the past school year, to assist the teachers and students in making full use of the school's Apple computers.

The following poem was sent to Mini'app'les by Barb Kostial, who co-chaired the parents' effort with Deb Markam. It was written by Maggie Corens, a fifth-grade teacher at Widsten, to express the teachers' appreciation for the contributions made by the parent volunteers. (By the end of the school year 24 parents were taking part. The group plans to expand its efforts during the next school year.)

The computer moms are dear to us
They've made our year such a success
Not just ok, or good, or even fine and dandy
But truly filled with wonderfulness!

I'm grateful that you found the time
To give us so many hours
You boot those disks so fast, it seems
You must have bionic powers!

You help us when we get stuck
And don't know what to do
Your patience is controlled and reset
As you help us muddle through.

And these past two weeks
With the many extra hours given
We know you incredible computer ladies
Have certainly been sent from heaven!

So thanks from the bottom of our little disks
We'll never boot you out in the hall,
Hope your summer is a great escape
And you'll access us again in the fall.

Love,
Widsten

Puzzle Answers

Errata
by Dan Buchler

In the June newsletter Ron Androff offered a puzzle and requested the Applesoft solution with the least number of steps.

Last month's issue contained a solution by Frank A Yauger.

Unfortunately, your editor typographed an error: + in LINE 3 should have been *. The corrected version is:

```
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
```

I apologize for frustrating at least one member who called to complain that the routine wouldn't work.

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

Steve George also submitted a solution as follows:

```
100 VTAB 1 : HTAB 1: PRINT "I'M THINKING";:
    X = X + 1: HTAB 12 + X * (X < 40) :
    VTAB 1  + (X + 12 > 40): PRINT ".";:
    Y = 98 - X: ON NOT((Y - (X -Y))/2 = X - Y)
    GOTO 100:     PRINT:
    PRINT "HIM---"X"   HER---"Y:
    END
```

Note: spaces inserted for readability. Extra spaces must be discarded during type-in, or line will exceed 255 characters!

Now Steve, in my opinion, cheats! And, further, he clutters up what may be an elegant solution with Boolean positioning mish-mash.

Here is another **simple solution** by
Rich Dewitt, Mound, MN.

```
1 X = X + 1
2 IF ((98 - X) -14) * 2 <> X THEN 1
3 PRINT "HIM---" X " HER---" 98-X : END
```

Talking about cheating: if one takes Rich's solution and performs some simple Algebra you might proceed as follows:

Refering to Statement 2, it reduces to

```
  2 IF (98-14-X) * 2 <> X THEN 1
Then:
  2 IF (84 -X) * 2 <> X THEN 1
Then:
  2 IF (168 -(X * 2)<> X THEN 1
Then:
  2 IF 168 <> 3*X THEN 1
Then:
  2 IF 56 <> X THEN 1
Then:
  2 X = 56
```

Therefore the most elegant solution is:

```
1 PRINT "HIM---56 HER---42": END
```

Anybody got any opinions? Complex elgegantia or straight forward simplicity?

(Editor's note: Steve George is really a nice guy! This Editor votes the prize to the editor.) If that doesn't fly, Androff must decide and supply the prize.)

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Assembly Language

AN INTRODUCTION TO ASSEMBLY LANGUAGE PROGRAMMING

by Charles R. Smith

Reprinted from: The Maple Orchard
Box 696, Station B
Willowdale, Ontario
Relayed via the IAC Compiler

WHAT IS ASSEMBLER AND MACHINE LANGUAGE?

Most of us have some familiarity with BASIC, with its English-like com mands such as 'PRINT', 'INPUT' and 'FOR .. NEXT'. There are other high-level languages, like Fortran and Pascal, which similarly are formed of English like commands. The Apple's central processing unit (CPU) cannot understand such English commands, but instead the CPU must 'interpret' the commands or 'translate' them into a form which it can understand. When running a program in BASIC, the Apple takes each line of the program and interprets it into a machine language form. Once interpreted, the CPU then executes the line. Applesoft is therefore called a 'BASIC Interpreter' or is an 'interpreted BASIC'.

The opposite of the high-level, structured languages are assembler and machine language. The terms 'assembly language' and 'machine language' are often used interchangably, although there is a difference. Programming in machine language is accomplished when hexadecimal or binary data is loaded into the computer byte-by-byte (e.g. entering the Monitor by CALL -151 and inputting '300: A9 0A ...'). When computers were in their infancy, this was the only option available. This form of programming can only be intelligible to people who think like a computer. To us lesser mortals, writing a program in machine language is the ultimate exercise in frustration. (An aside: when Steve Wozniak and Steve Jobs first built an Apple I computer, they took it to parties and entered hundreds of hex codes by hand just to load in a program to demonstrate this first Apple's ability. Allegedly, DOS was first written this way!)

Enter Assemblers. An assembler is simply a tool which allows a person to write a program using somewhat more intelligible commands, and then the assembler program converts ("assembles") the English-like commands into the corresponding machine-language code.

While there is a definite and significant difference between 'assembly' language and 'machine' language, the two terms are often used interchangeably. Throughout this article, such interchangeability shall be used.

WHY PROGRAM IN MACHINE LANGUAGE?

If assembly language is tougher than BASIC, why bother being a glutton for punishment? Is there something to be said for such an arcane language? Consider these three reasons: speed, flexibility and memory management.

The most prominent benefit of a machine language program can be seen anytime you play a commercially-produced, arcade style game. Such games are invariably written on an assembler (the people at Southwestern Data Systems tell me that the games from Sirius are written on Merlin). The execution speed of a machine language program is much faster than a corresponding BASIC program - arcade quality games simply cannot be written in BASIC. Even BASIC which has been compiled into machine language (by Applesoft compilers such as TASC or Speedstar) is still slower and more memory-hungry than an equivalent program written in assembler. The advantage of speed can be used in other situations which will significantly enhance the Apple's capability. Sorting, matrix operations and disk utilities are but a few reasons to use the speed of machine language.

The second reason to program in machine language is the increased flexibility which it offers. The commands in Applesoft can be enhanced by the use of short machine language routines hidden away in memory. Print formatting functions, sound generation, sorting, string handling and swapping, decimal to hex conversions, garbage collection and memory clearance, and array operations are but some of the more commonly used subroutines. While such machine language enhancements are available commercially, they can also be had at a very low cost, as they are listed in such publications as Nibble and Call-APPLE.

GOTO 19

Assembly Language Continued from page 18

The third advantage relates to memory management. Machine language programs are more efficient in their consumption of memory than are their BASIC counterparts. Because of this, it is possible to have several machine language routines residing in memory concurrently, thereby enhancing Applesoft while at the same time avoiding a significant reduction in the memory available to the user.

WHAT IS NEEDED TO GET STARTED

To begin programming in assembler/machine language, it is not necessary to purchase any software tools. A good book, however, can be invaluable. Once your interest is sparked, you may develop a sudden urge to purchase an assembler. Other machine language utilities are helpful.

There are three different levels of sophistication at which you may enter machine language programming:

1) machine language using the Monitor
2) assembly language using the Mini-Assembler
3) assembly language using an assembler.

Let's look at each of these in order.

MACHINE LANGUAGE USING THE MONITOR

Although not the most flexible approach to machine language, this is the cheapest route to go, and it forms a good starting place. The way to begin is to exit Applesoft and get into the Monitor by means of the command:

```
CALL -151
```

which yields the '*' prompt.

From here we can enter a program by giving the starting address and the hexadecimal data. Try the following:

```
*300:AD 30 C0 88 D0 FD 4C 00 30 <ret>
```

where you entered the number 300, a colon, then 9 sets of hexadecimal data. Be sure that you do not leave a space between the colon and the first number. At the end of the line, enter a <carriage return>. Up to 85 hexadecimal numbers can be entered at once this way.

What this program does is toggle the speaker by addressing its memory location (AD 30 C0), counting downwards from 255 to 0 (88 D0 FD) and then jumping back to the start (4C 00 30). In other words, this short routine keeps a constant tone going on the speaker until you hit <RESET> to get out of it. To start this program once you have typed in the above line, simply go to location $300 and do what's there by the command:

```
*300G <ret>
```

You have just entered your first machine language program (this program example is courtesy of SC Macro Assembler).

Now go on to greater things. Grab an assembly/machine language listing and enter it into your computer. If you are entering an assembly listing, you will see the hex code in the left hand columns. For example, the above program looks like:

```
300 - AD 30 C0 1 TONE LDA $C030
303 - 88 2 LOOP DEY
304 - D0 FD 3 BNE LOOP
306 - 4C 00 03 4 JMP TONE
```

Remember to save your work on disk. This is done with the BSAVE command. It is necessary to specify the starting address and length parameters using the 'A$___' and 'L$___' commands. If a program went from 0300 to 0320, it would be (hex) 20 or (decimal) 32 bytes long. Therefore it would be saved by the command:

```
*BSAVE MYPROGRAM,A$300,L$20
```

where A$ is the starting address in hexadecimal and L$ is the length in hex. It could also be saved by the command:

```
*BSAVE MYPROGRAM,A768,L32
```

where A is the starting address in decimal (768=300 hex) and L is the length in bytes.

To check a program listing, enter the start and end address, separated by a period. For the short TONE program above, enter:

```
*300.308 <ret>
```

If you want to see the disassembled code, enter the starting address and "L" to list 20 commands. To see this program, enter:

```
*300L <ret>
```

(To make the entry and correction of machine language programs, one of the disks from the International Apple Core (Disk 25, Machine Language Utilities) contains a utility to facilitate this process. It is called BEU (for Binary Entry Utility) and will locate itself either on a 16K RAM card or in the Apple's 48K RAM.)

GOTO 20

Assembly Language Concluded from page 19

PROGRAMMING WITH THE MINI-ASSEMBLER

In the original Apple II machine was a monitor function entitled the "Mini-Assembler". Its job was to facilitate entry of machine code into the computer. When Applesoft was developed for the Apple II Plus, this function (along with STEP and TRACE in the Monitor ROM) were deleted. That is the bad news. Now for the good news. If you have a 16K RAM card, loading Integer BASIC upon booting up the DOS 3.3 SYSTEM MASTER disk will load the Mini-Assembler into your machine. This can be accessed by entering Integer with the command:

INT

which yields the '>' prompt. Then enter:

>CALL -151

to get the monitor '*' prompt. Then go to the Mini-Assembler with the command:

*F666G

which yields the exclamation (!) prompt.

The Mini-Assembler is still available to the owner of a 48K Apple][Plus, as it has been modified and included on the IAC Disk #25. Instructions for its use are given in an accompanying file, while more complete instructions are given in the APPLE][REFERENCE MANUAL. Apple //e owners can access the Mini-Assembler through Integer BASIC.

ASSEMBLER

Once you've gotten your feet wet by gaining access to the Monitor and entering a hex listing, you will realize the fact that there has to be a better way. Obtaining an assembler is that way. There are at least ten commercially available editor/assemblers, and the perfect one is probably still to be written. Buying an assembler is like obtaining any other software, as the amount of money to be spent and the configuration of your machine will be controlling factors.

OTHER AIDS

Other types of aids are also worthy of consideration. A disassembler is a handy tool which will permit you to take machine language (hexadecimal) code and re-convert it into an assembler source listing. From there, you can edit, alter and re-assemble the code to make it function in a different manner or at a new memory location. A disassembler is available in the Apple's monitor and is able to disassemble to the screen, using the

*XXXX L <return>

command, where XXXX is the memory location at which to begin disassembly.

Debuggers are for those who are very serious - they permit step and trace functions and a host of other advanced features. Two examples of commercial products are Bug Byter and Munch-a-Bug. BEU on the machine language disk also contains debug routines.

There is even a new product which will turn your machine into a 'visible' Apple as it shows you on the Hi-Res screen how your Apple works, displaying the instructions, registers, flags and memory locations as it executes a program one step at a time.

And where would we be without books? A variety are available, each one for a slightly different reader. There are some general references on programming the 6502 microprocessors, several good books specifically written for Apple 6502 machine language, and books which serve as a road-map or atlas to the Apple's internals. Much is written in the monthly magazines, and there is even a monthly publication on machine language progamming. But the best starting place is the APPLE][REFERENCE MANUAL, which lists the opcodes available on the 6502 and some important internal routines.

When all is said and done, people who know a few BASIC commands can easily find their way around machine language. There is a certain joy in entering, debugging and running a program, be it in BASIC, assembler or whatever. And isn't that joy a big reason for owning an Apple?

KoalaPad Concluded from page 14

The KoalaPad lists for $125, with the possibility of a somewhat lower net price. Either way, I think that it's one heck of a good deal just for the graphics capability. In addition, it supposedly can also work as a joystick for other programs; I tried that with less than total success, but that just might be me rather than the KoalaPad.

All in all, the KoalaPad is the best thing since sliced bread, as the Mini'app'les note said. If you've ever had a desire to try doing any graphics work, and even if you haven't had a desire, you'll get one as soon as you see the KoalaPad in action. (Editor's note: Earl Benser, and Mini'app'les have no connections with Koala Technologies Corporation. Also, your editor just bought one!)

MINUTES

by Hugh Kurtzman

Minutes for Board Meeting, July 13, 1983

The Treasurer reported:
Expenses 2153.35
Income 145.00
Balance 10753.11

The budget was tabled as only 9 sub groups have submitted their budget.

Dennis Foster raised the question of group purchases.

A motion to handle bulk purchases of paper through the Bulk Purchases Coordinator was defeated.

A motion to allow Dennis Foster to sell paper for 6 months was defeated.

A motion was made that a Bulk Purchase Coordinator be charged with securing proposals, on a yearly basis, for such consumable items as the club may wish to purchase at a bulk rate. That bulk rate and/or brand shall be made available to club members at the established rate for a minimum of 6 months. After which time and up to 1 year either the Coordinator or the board may direct that reconsideration should be made.

Amended, that the Coordinator not be involved in the bid. Amended, that the final approval on the proposal be made by the club officers.

Motion and amendments passed.

Motion that the president appoint a Bulk Purchase (non-consumable) Coordinator whose task will be to coordinate the activities of vendors (members or otherwise) who wish to offer items for bulk purchase to club members. The coordinator will be in a nonprofit role, with the task of selecting appropriate vendors. The vendor, after approval, will deal direct with club members, make their profits, incur expenses and carry appropriate liability.

Amended that officer approval of coordinator's proposals is required.

Motion, as amended, passed.

Jay Warrior reported the club Bulletin Board is coming along. A place has not been selected yet but 5000 lines of PASCAL code is written. They are looking into some interesting things, such as two modems on one Apple.

Dan reported that the same people are running the Twin City Computer Show this year as last, with the same communication problems.

Dave Nordval is back in the MECC disk business. He will publish the new procedure in the next newsletter.

The meeting was adjourned at 10:12.

Announcements Concluded

Minnesota Sales Tax

A document was distributed by the State to tax number holders. This document, dated 6/16/83 and entitled "Sales and Use Tax Law Changes" stated that all packaged and canned software sold without adjusting to specific requirements is considered a taxable sale of tangible property, effective 7/1/83. Software is therefore subject to the Minnesota 6% sales tax. However, if you develop or modify a program and sell it, it is not subject to sales tax. Information courtesy of Dick Marchiafava.

St. Paul Branch

The St. Paul branch of Mini'app'les has until recently been meeting in White Bear Lake. In April we moved to Mahtomedi. One member asked why the St. Paul branch didn't move to St. Paul, a more logical place for that branch to meet.

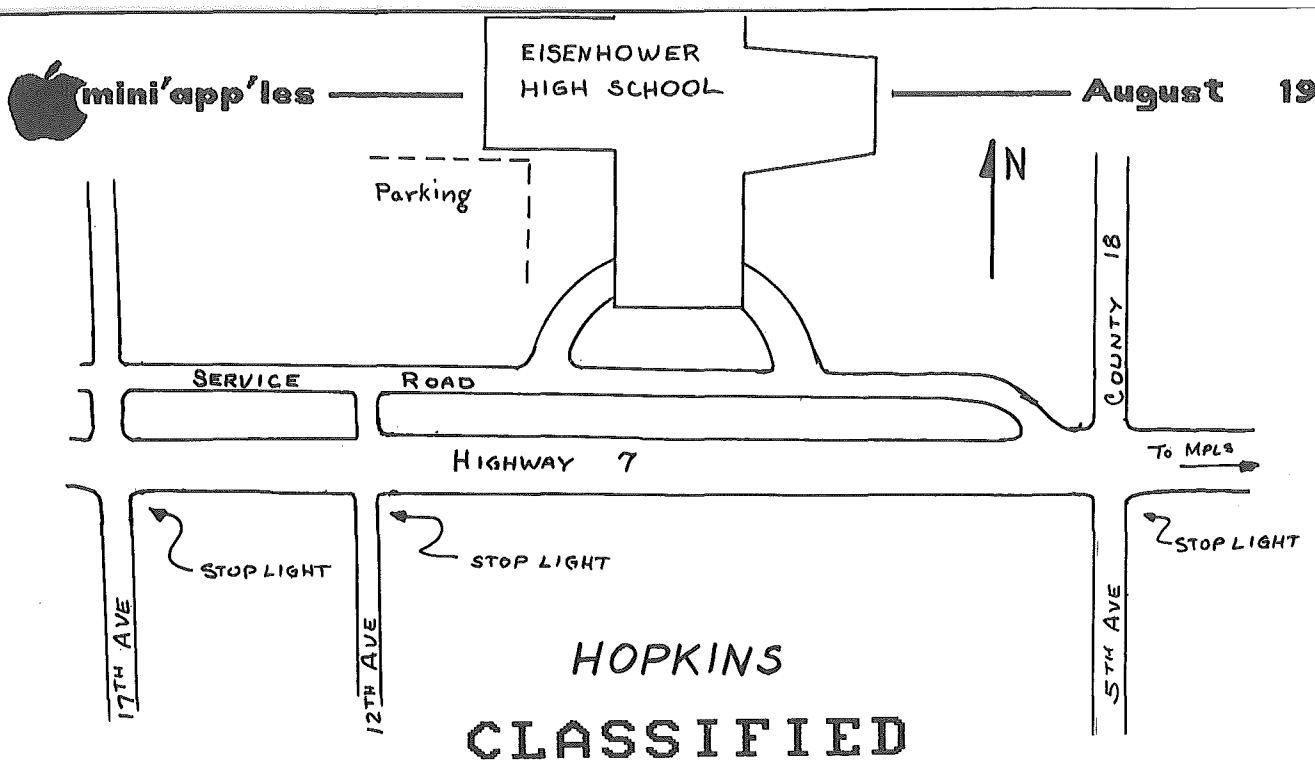
We are now considering renaming the present branch the **Mahtomedi** branch and starting a new branch in St. Paul. To do this we need to know whether there are enough members to support meetings in two locations.

Possible locations for a St. Paul branch meeting are:

1. St Paul Campus of U. of M.
2. Midway (somewhere between Snelling and University).
3. Macalaster area.
4. Highland area.
5. Other, you specify.

Anyone with ideas or opinions on this matter is asked to call one of the persons below. It is important that we hear from you so we can determine if there is sufficient interest to proceed. Evenings and weekends

Tom Karl 644-0554
Pete Halden 770-6624



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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.**

Apple **Silent Writer** dot matrix printer, 2 rolls thermal paper, interface card. $280.
Don 835-2720

VisiCalc Program for sale. New - never been used. $175.
Gloria 823-2811

Apple][+,48K, LC Adapter $600 2 Apple Drives @ $200ea; Disk Controller $90; MPI 88G Printer $250; Videx 80 col card (never used) $200; Apple Super Serial Card (2 mos old) $150; DC Hayes Micromodem II $250; SuperText $50; Applewriter II $25; Visiterm $60 Make offers.
Anne 572-9893

Apple //e, 80 col, 1 Drive, Apple Monitor, stand, table, VisiCalc and other software - $1800. **Epson MX-100** (never used) incl paper - $600.
Karen 447-4700(w)
447-2845(h)

Corvus 5Mbyte Hard Disk with Apple Controller. Use with DOS and/or Pascal, and CP/M.
Keith Johnson 698-3292(eve)

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

Wildcard Copy Card for Apple][+. Includes System Master and Utilities. $99
Ed 890-8752(e)

Wanted: GRAPH TRIX 1.2 or 1.3 by Data Transforms.
Steve 935-5775

Wanted: a used **Integer** (or Applesoft) **ROM card** (Not a 16K or language card).
Call 729-3948

Wanted: Cards for Apple, especially Serial Cards, etc. Any condition.
Richard (10-7) 644-4660

Okidata Microline 80 Dot matrix printer. Like new $250.
Jim Baker 872-6741

MPI 88G printer, 100CPS, Par/Ser, 2K buf, Exc Cond., $375; Magic Window $45; Magic Window II $90; Tax Prep $40; Wizardry $30; MagicCalc $90; Star Blaster $20; Continental Genl. Ledg. $160; Guardian $20; Copy II+ $15; Visidex $170; magazines.
Ron 448-5743

Two **Apple Disk Drives,** used less than a year. $250 ea.
Judy Norback 927-5537

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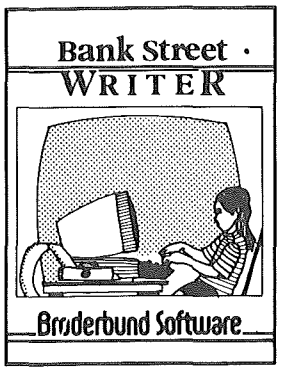

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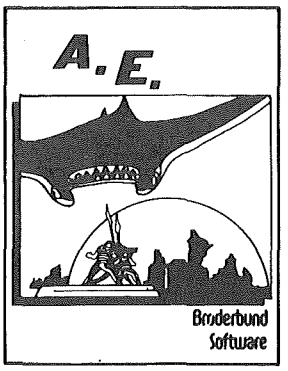

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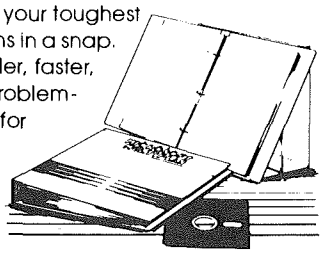

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