



mini'app'les

apple computer user group newsletter

VOLUME V No 8

AUGUST 1982

CALENDAR

WHICH	WHEN	WHERE
<i>Pascal</i> Note 1	Wed Aug 4 7:30pm	Minnesota Federal 9th Ave S Hopkins
<i>VisiCalc</i> Note 9	Tue Aug 10 7.00pm	PBS 4306 Upton Ave S.
<i>Dakota County</i> Branch	Tue Aug 10 7pm-10pm	St. John Neumann Chch Pilot Knob Rd, Eagan
<i>Business</i> Note 10	Thu Aug 12 7:00pm	Minnetonka Sch of Bus's 11 S. 5th St., Mpls
<i>Home Projects</i> Note 11	Sat Aug 14 7:30pm	1096 E. Sims St Paul

**REGULAR
MINI'APP'LES**
Note 2

WEDNESDAY
AUG 18th
Prgm-7:00pm
SIGs-8:00pm+

**PENN
COMMUNITY
CENTER**
84th & Penn

St. Paul
Branch
Note 3

Tue Aug 24
7pm-10pm

Minnesota Federal
White Bear Lake
Shopping Center

Minnetonka
Branch
Note 8

Wed Aug 25
7pm-10pm

Minnetonka High School
Cafeteria

Pascal
Note 1

Wed Sep 1
7:30pm

Minnesota Federal
9th Ave S Hopkins

VisiCalc
Note 9

Tue Sep 7
7.00pm

PBS
4306 Upton Ave S.

Dakota County
Branch

Tue Sep 7
7pm-10pm

St. John Neumann Chch
Pilot Knob Rd, Eagan

Business
Note 10

Thu Sep 9
7.00pm

Minnetonka Sch of Bus's
11 S 5th, Mpls

**REGULAR
MINI'APP'LES**
Note 2

WEDNESDAY
SEP 15th
Prgm-7:00pm
SIGs-8:00pm+

**UNIVERSITY
MINNESOTA
ST. PAUL**
Room B45 Bldg 412
Near State Fair

**Apple-
Fest 82**
Note 6

Sep 16-19
Note 6

Auditorium and
Convention Center, Mpls

St. Paul
Branch

Tue Sep 21
7pm-10pm

Minnesota Federal
White Bear Lake
Shopping Center

CALENDAR

WHERE
Minnesota Federal 9th Ave S Hopkins
PBS 4306 Upton Ave S.
St. John Neumann Chch Pilot Knob Rd, Eagan
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CALENDAR

WHAT
Regular <i>Pascal</i> Special Interest Group Meeting.
80 Col Visicalc on the Apple II
Note 7
Wordhandler II Word Processor
Construction of Power Control Center
Computer education for children as a Community Service. Map back cover
<i>Joe Miller</i> on VisiCorps products
<i>Bill Randall</i> What else the Apple can do.
Regular <i>Pascal</i> Special Interest Group Meeting.
Datagramming by Bob Guers
Note 7
Map Next issue
A Huge Exposition devo- ted exclusively to Apples
General meeting Note 3

- Note 1. Contact- *John Schoeppner*
2. see pg 2 *Chase Allen*
3. for tel. *Pete Halden*
4. nos. *Bill Decoursey*
5. *Ron Androff*

6. *Dan Buchler*
7. *Bob Pfaff*
8. *Martin Thaxes*
9. *Mike Carlson*
10. *Subir Chatterjee*
11. 771-2868 *Roger Flint*

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 any officer. Technical questions should be directed to one of the Technical Advisers listed here.

Membership

Applications for membership should be directed to the Membership Co-ordinator. \$12 buys membership for one year. 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 Software Sales coord'r.

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 3rd 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 rates

Full Page \$40/issue
Half Page \$25/issue

Circulation 1200 (approx)

ANNOUNCEMENTS

HELP THE HANDICAPPED

The Minneapolis Association for the Hearing Impaired (MAHI) is planning a conference on the application of Personal Computers for hearing impaired persons. The emphasis will be on education but there is also interest in speech synthesis, speech recognition and general use of computers at home. The conference will probably be held on the second Saturday in October.

If anyone has experience or interest in these areas, please contact
 Del Smith 378-4305 (w)
 941-6996 (h).

Information, advice and or help (demonstration, etc.) will all be appreciated.

CONSTRUCTION PROJECT Power Control Center

Roger Flint will help you build a Power Control Center for your Apple as described under Home Projects elsewhere in this newsletter.

date: Saturday, Aug 14th
 time: 7:30pm.
 place: 1096 E. Sims
 St. Paul, MN 55106

Please Call Roger if you are coming so that you understand what you must bring and what is involved.

BUSINESS SIG by Subir Chatterjee

The Business Sig met on July 8th, at Dayton's warehouse. Earl Anderson reviewed a general Ledger system marketed by WESTWARE - System II Ex. (\$1500). The system includes Payroll, General Ledger, Inventory, Receivables, Payables and Database. Earl did a phenomenal job demonstrating every segment of the package during the evening. Discussions suggested that the package is extremely fast and versatile. Contact Earl at 861-1661 for more information. We thank Earl for the presentation.

The Business SIG has now found slightly larger quarters at:

Minnetonka School of Business
 11 South 5th Street
 Minneapolis.

The SIG will meet there on the second Thursday each month starting at 7pm. The

next Business SIG meeting will be on August 12th at the Minnetonka School of Business. Subir Chatterjee will review Wordhandler II - a word processing package that displays up to 65 characters/line in upper and lowercase without requiring an adapter. This package was reviewed in Nibble Vol 3 No 4.

VISICALC SIG

The next meeting will be on August 10th, 7 to 8:30 at

Personal Business Systems
 4306 Upton Avenue South
 Minneapolis, 55410
 Contact Mike Carlson: 929-4120

Program will include 80 column Visicalc on the Apple II and Use of Visicalc at the Republican State Convention.

Next month's meeting will be on Sept 14th. It will feature Bob Guers of Mankato presenting ideas about Datagramming.

St. PAUL BRANCH

This branch meets at:

Minnesota Federal Building White
 Bear Lake Shopping Center

on Tuesday following regular Mini'app'les meetings.

Next meeting will be on August 24th. Joe Miller of PBS will demonstrate the VisiCorp products including VisiCalc, VisiTerm, VisiTrend and VisiPlot.

EDUCATION SIG!!!!!!!

Marcia Braverman, a member whose business is Educational software, has volunteered to start an Education SIG - that is a SIG to explore the creation and use of Apples as an Educational tool.

If you are interested and might contribute or simply attend an Education Sig meeting, please call Marcia at 920-7427.

MINNETONKA BRANCH

The meeting night for the Minnetonka branch has been changed to the 4th Wednesday of the month. At the next meeting, Aug 25th, Bill Randall will talk on: What else the Apple can do.

8070 10

PRESIDENT'S PEN

by Ron Androff

Our membership has increased by over 300 members in the last five months and we now have over a thousand members. That is a measure of success to a lot of people, it implies that many Apple owners enjoy sharing their experience with others. I also perceive that more than a few people are seeking help in understanding and using their new machines.

It seems to me that the background of the "average" new member is changing. That is, the people joining the club today do not have the technical background earlier members brought with them. A few years ago, the "average" new member had previous exposure to computers, either in software or with the hardware. The individual already knew many of the buzz words; ROM, bus, byte, stack, CPU, and hundreds more. And, even if he was not fluent in the various numbering systems such as binary, octal, and hex-a-decimal, he had some understanding of them.

Slowly the consumer base expanded, until now many Apple owners buy their system for a business purpose or so that their kids may learn programming. They run businesses; are doctors or teachers, or work in other non-computer related fields.

If this is true, then it is important that the club make every effort to provide information to, and contacts between members via special interest groups, branches and seminars. Aside from the formal learning of college classes (a formidable and expensive commitment), I can not think of any other way an individual can get an exposure to the wide range of topics our members may want and need to fully utilize and work with their computers.

While, the club is aware of this growing need, it does take time and a good deal of effort to put together the body of knowledge needed by the member, to organize a presentation, and to find the manpower qualified to guide him. Also, most of us are not educators, so we will I fear, make a false start here and there but with your help and patience the club should be able to provide exposure to, if not an education of, the topics you want, to better use and understand your computer.

Unfortunately, my next topic is more onerous. It has been brought to our attention that copyrighted software was being copied and distributed by

individuals at one of our SIGs or branches. It seems that periodically we must re-affirm our position concerning that activity. So here goes: members are not permitted to indulge in such activity during any of our meetings. It is clearly stated in our bylaws that we are opposed to the illegal copying of copyrighted software and we are charged to prevent any efforts to do so. Enough said?

On the lighter side, I occasionally am asked a question about BASIC programming and if it is simple enough I will venture an answer. Recently I was asked how one could wait for a key to be pressed without the cursor flashing on the screen. The individual was new to Apple and not fluent in BASIC, thus did not know of the POKES, PEEKS and CALLS one might use. There are too many for one to memorize, so even experienced programmers have to look them up. An answer to the question is to PEEK at the memory location -16384 which contains the latest keystroke value.

```
10 X = PEEK (-16384) : IF X < 127
    THEN 10
```

The computer will loop on this line until X has a value greater than 127, or namely when any key has been pressed. This line should be followed by:

```
20 POKE -16368,0
```

which will clear the machine so one can look for another key press. If you do not POKE this location the next time you look for a keystroke to be pressed you will find the old one.

Another variation of this command is to use it as an interrupt during a portion of your program that is very long and which the user may wish to end, such as a long delay to allow the user to read instructions etc. The experienced user does not need to read the instructions each time he runs the program and would appreciate not having to wait for the delay each time.

```
5 GOTO 20
```

```
10 POKE -16368,0 : I = 10000 :
    RETURN
```

```
20 FOR I = 1 TO 10000
```

```
30 X = PEEK (-16384) : IF X > 127
    THEN GOSUB 10
```

```
40 NEXT I
```

```
50 REM Continue program.....
```

GOTO 7

DATATRONIX, INC.

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ELEMENTARY MATH
WHOLE BRAIN SPELL:
SCIENTIFIC
MEDICAL
CHILDS GARDEN OF WORDS
THE LINGUIST
PLANETARY GUIDE

Here are some typical examples of some OUTSTANDING software we have in stock NOW.

COMPU-SPELL

This revolutionary instructional system teaches spelling by refusing learners the opportunity to fail! Designed for both home and classroom usage, COMPU-SPELL is available with data diskettes suitable for grade levels 4 through 8. Also available is an adult/secretarial data diskette featuring many of the most frequently misspelled words in the English language. Each data diskette contains about 800-1200 spelling words. All spelling words are displayed in sentences.

COMPU-SPELL features individual learner file management, high-resolution upper/lower case displays, user file building capabilities and a "positive reinforcement only" instructional algorithm.

TYPING-TUTOR provides a combination of lessons and paragraph drills so that you can learn new keys, then practice using them in conjunction with keys you already know. You may choose to concentrate on letters, numbers, or symbols. Typing Tutor provides instant feedback on you speed, accuracy, number of mistakes and even your weakest keys. It tailors subsequent lessons to work on problem areas.

MATHEMAGIC This program transforms your Apple Computer into the ULTIMATE CALCULATOR.

Now, use the power of your computer for sophisticated mathematical calculations without any programming! A helpful tool in the office, laboratory, classroom or in the home. It's flexible and easy to use.

Free-form entry of expressions of up to 240 characters (including standard math operators, pre-defined functions, user-defined formulas, parentheses, variables, etc.) Built-in mathematical functions (trig, logs, conversions, etc.). Easy to create and edit variables sets and values. Disk storage and recall of user-defined formulas and variable sets. Automatic retention of variable values for chain calculations. Free use of "ask variables" to allow "what if" and repeat types of calculations. Full hard copy support, including a trace function. A configuration segment to take advantage of your system facilities. User numbers assigned, so multiple user files may reside on disk. Number base conversions (e.g. hex/decimal) provided. Rapid calculation or stepped calculation for viewing intermediate results. Automatic repeat calculation.

EASY Menu-driven format makes learning fast and use consistently easy. You have on-line "HELP" for every MATHEMAGIC command and option and a comprehensive user reference manual with sample applications is provided.

PHONE (612) 835-1009 TO ORDER
HOURS 1:00 TO 5:30 MON.-FRI.

SHOW UP FOR THE SHOW

MINNEAPOLIS AUDITORIUM
AND CONVENTION HALL
MINNESOTA

SEPTEMBER 16-19, 1982

THURSDAY: 11 AM TO 7 PM
FRIDAY: 11 AM TO 9 PM
SATURDAY: 11 AM TO 9 PM
SUNDAY: 12 NOON TO 6 PM



SEE US AT THE SHOW

The world's largest presentation of Apple-compatible products including hundreds of exhibits featuring plug-in cards, computers, components, peripherals, publications, gifts, magazines, services, accessories and software for home, office and school... plus seminars, workshops, hands-on centers, software spotlights and special multi-media presentations.

For Apple Users, Applefest is absolutely the most spectacular extravaganza ever... It is an international conference, convention and exposition featuring 7,000 different Apple accessories (at discounts of 10% and more) and dozens of workshops and seminars to make your Apple more exciting, more useful and more powerful... than you ever imagined.

Planning to purchase a computer? Factory experts will be on hand to instruct

you and your family. You'll see why Apple, with its thousands of accessories and software packages, is the most versatile computer for business and personal use.

Admission is \$6 per day for adults and \$3 for children. Multiple-day discount tickets are available at the door. There is no additional charge to attend the seminars, workshops and hands-on centers.

LOOK FOR THESE EXHIBITORS

ABI Microcomputer Software
Acton Research Northwest
Addison-Wesley Publishing
Adventure International
Adwar Video
Allied Van Lines
Alpha Byte
Alphacom
Alpha Software Corp.
Amdek Corp.
AP Computer Products
Apple Computer, Inc.
Apple Seed
Applications
Applied Software Tech
Arts Computer Products
ARW Productions
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Penguin Software
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Piccadilly Software
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Practical Peripherals
Productive Personal Products
Professional Software Technology
Prometheus Products/SGC
Qume
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Silicon Valley Software
Sir-Tech Software, Inc.
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Zork Users Group

APPLEFEST 82

"The last time I saw such lines was during the opening week of 'Star Wars'" says Scott Burns of the Boston Herald American about the Applefest in May.

What started out as a simple gathering for Apple users has turned into what will be one of the most spectacular public expositions of computer technology ever held. **Applefest 82** - a four day extravaganza that will travel to three cities. Applefest has grown explosively since its 1981 inception. The May '82 show in Boston drew 23,347 attendees according to the show's producers.

Applefest/Minneapolis will be held Thursday through Sunday, September 16-19 at the Minneapolis Auditorium. The show will go to Houston in October and San Francisco in November.

Applefest will include hundreds of manufacturers, distributors and dealers showcasing and selling the entire spectrum of Apple-compatible products including computers, components, peripherals, plug-in cards, publications, gifts, magazines, services, accessories and software for home, office and school. Hands-on centers and multimedia presentations will demonstrate the newest applications for business, education and entertainment. Mini'app'les will have it's own booth portraying the club benefits and achievements.

Early indications from exhibitors, sponsors and the show's producers point out that over 15,000 Apple users will attend the September event in Minneapolis.

According to the show's producer, Northeast Expositions, Inc., the biggest problem will be locating enough hotel rooms in Minneapolis to accommodate two to three thousand out-of-state Apple owners.

Entrance tickets to Applefest also get you into the National Computer show, a more general computer exposition which is also run by Northeast Expositions.

More information on Applefest may be obtained from your newsletter editor (see page 2) or from Northeast expositions at 617-7309-2000; 824 Boylston Street, Suite 202, Chestnut Hill, MA 02167.

Schedule for Applefest Minneapolis is:

Sept 16, Thursday 11am to 7pm
 Sept 17, Friday 11am to 7pm
 Sept 18, Saturday 11am to 7pm
 Sept 19, Sunday 12 to 6pm

Admission \$5 for adults. Multiple day discount tickets and childrens tickets also available.

President's Pen Continued from page 4

In this example if one does nothing the computer will count up to 10,000 and go on to step 50. If during that time a keystroke is made the program will do the GOSUB 10 where the strobe is cleared and I is set equal to 10,000 thus ending the FOR NEXT loop and it goes on to step 50. In either case one ends up at step 50, but in one the user stops the delay.

Another clever trick, which I found in a program, employed several of the memory locations listed below.

32,L(ength)
 33,W(idth)
 34,T(op)
 35,B(ottom)
 36,CH C(ursor)H(orizontal)
 37,CV C(ursor)V(ertical)

Now you may recognize the first four locations as the window parameters for the screen. The next two contain the present horizontal and vertical cursor positions. So what!, you say. Well, suppose you wished to put various instructions or other information on the screen and then keep it there while the user acted on that data? The line:

```
100 PRINT T$:X = PEEK (37):POKE 34,X
```

would print T\$, your instruction or piece of information. The PEEK (37) checks where the cursor is and the POKE 34,X moves the top of the window down to that line protecting what ever T\$ was from being scrolled off the screen. It gives a very nice effect. However, do not forget to reset the window when you finish.

All this information is on pages 129-131 of the Applesoft BASIC Programming Reference Manual, so it is no deep dark secret. That it is in the book, however, is little consolation to someone who has not had the opportunity to browse through the various manuals yet, or simply doesn't know for what to look.

APPLESOFT FILES WITH 6502 CODE

by John Schoepner

Many Applesoft programs, like COPYA, have a machine code segment that must be resident on the current disk when the program is run. Execution of the machine code part is not a problem because the Applesoft program usually loads and calls the machine code program. The problem is that you must have two or more files on the disk. This often results in a messy CATALOG with files that may get lost or forgotten in a disk transfer.

This article will show you how to combine the Applesoft program and its machine code subroutine into one disk file. I will use the the Apple copy program, COPYA, and its code file, COPY.OBJO as an example.

When your Applesoft program is complete you must find where it ends in memory. This address is stored at memory locations AF and B0.

Example:

```
LOAD COPYA
CALL -151
*AF.B0
00AF- 35
00B0- 0F
*3D06
```

The first free byte of memory after the BASIC program is 0F35.

Now we must find the starting address and length of the machine code subroutine. The starting address is found at memory locations AA72-AA73 and the length can be found in memory locations AA60-AA61 in a 48K DOS system.

Type:

```
BLOAD COPY.OBJO
CALL -151
*AA60.AA61
AA60- 0B 01
*
```

The length is 10B HEX. Write this down, you will need it later. Now to get the starting address type:

```
*AA72.AA73
AA72- C0 02
*3D06
```

The starting address is 2C0 HEX. Write this one down to use in later.

The next step is to load the machine language subroutine at the end of the BASIC program. This is done like this:

```
BLOAD COPY.OBJO,A#0F35
```

Now the end of program location stored in AF-B0 must be increased by the length of the machine language subroutine. To avoid the HEX arithmetic in changing AF.B0 just type the following:

```
CALL -151
*280: AD 60 AA 65 AF 85 AF AD
AD 61 AA 65 B0 85 B0 60
*2806
*3D06
CLEAR
```

The CLEAR command must be entered to get the variable pointer to the new end of program. The machine code has been added to the Applesoft program, but there still is more to do.

80T0 18

VEEP'S VIEWS

by Chase Allen's sub.

Veep had some other commitments this month, so this is a substitution by your newsletter editor.

The July meeting went better than could be expected considering that the scheduled speaker, Dr. Tilleli was unable to come at the last minute. The meeting format was reversed, and the special interest groups were allotted about 75 minutes to their thing. Earl Fuller and Bud Crewdson of the U of M. were kind enough to let us use individual class rooms for the above activities. That worked out very nicely. We thank them very much.

We were able to round of the evening with a presentation by Gary Cooper on Savvy. This is a product of a company called Marketing International, for whom Gary works. It is a very user friendly language with which you may create programs and databases. Very large programs and high precision are provided for. One effectively talks to the computer in English! The package at \$950 is not cheap, but is very impressive. It uses a plug-in board containing a Z-80 microprocessor and firmware which works in conjunction with a 4 disk package. The software runs under CP/M and the board may be used as a Z-80 board for CP/M.

Next's month's meeting will be at the Penn Center on Aug 18th. The topic will be Computer Education for children.

DATATRONIX, INC.

7625 BUSH LAKE ROAD - EDINA, MN. 55435
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C. Itoh Starwriter F10	\$1499
IDS Prism 132	\$1359
IDS Prism 80	\$999
Okidata u80	\$369
Okidata u82A	\$519
Okidata u84	\$1114
NEC 8023	\$529
Manns-Tally MT 1802	\$1589
Manns-Tally MT 1805	\$1589

MONITORS

BMC 12" grn.	\$79
NEC 12" grn.	\$179
NEC 12" color	\$349
Amdek Color I 13"	\$369
Amdek Color II (RGB)	\$899
Zenith 12" grn.	\$119

MODEMS

DC Hayes MicroMod II	\$295
DC Hayes SmartMod	\$229
Novation Applecat II	\$339
Novation Autocat	\$219

APPLE ACCESSORIES

Mntn Cmp CPS card	\$167
Prometheus Versacard	\$169
Wizard 80 Column card	\$249
Wizard 16K card	\$119
Micro Buffer II PPI	
apple prntr buf	\$229
Micro Buff. Epson 16K	\$139
Microsoft Softcard	\$299
Softcard premium offer	
Softc,16k,videx80	\$639
Calf. Cmp. 7710A	\$129
Grappler Printer card	\$137

SOFTWARE

Visicalc	\$179
Visidex	\$179
Visifile	\$189
Visiplot	\$159
Visiplt/Trd	\$219
Visiterm	\$89
VisiPack	\$549
Wordstar	\$275
Spellstar	\$179
Mail merge	\$89
Datatar	\$212
DB Master	\$189
DeskT Plan2	\$179
DeskT Plan3	\$229
PFS	\$79
PFS report	\$79

Other popular software will be available as requests warrant it.

DISKETTES

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10 Box	\$23.95

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Rana elite I	
w/o contr.	\$349
Rana elite I	
w/contr.	\$469
Rana contr crd	\$125

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HARDWARE REVIEW

OLYMPIA ES100 TYPEWRITER

by Tony Meirovitz

In my opinion, there is only one word for this typewriter: 'Superb'. The typewriter to which I am referring is the Olympia ES100 Electronic Typewriter. The typewriter has a net weight of 36.5 pounds, but you would never know it! When you look inside of it, there is nothing there! It is fully electronic. What's best of all, you can interface it with an Apple computer. Here is a list of the features of this machine:

- 92 character electronic keyboard
- 8 character buffer memory
- Automatic lift-off correction
- Dual pitch, 10 and 12 character per inch
- Easily exchangeable daisy wheel print elements
- More than ample paper capacity
- Approximately 15 inch writing line
- Typing speed, 17.5 cps
- Copy control
- Electronic margin settings from keyboard.
- Cartridge ribbons
- Glare free block keyboard
- Correctional half spacing, electronically controlled
- 55 repeat keys
- Printer return with line spacing
- Printer return without line spacing
- Up and down index keys
- Tabulator
- Reverse tabulator
- Single and total tab clear
- AUTOMATIC paper insertion and ejection

There.... Now that we have those out of the way, let me tell you some things about this typewriter. The first thing I said when I saw this typewriter was, "Wow! Is that ever big!" It is very big. The dimensions are as follows:

Height-7 inches Width-26 inches
Depth- 18 1/4 inches

As far as print quality goes, it is outstanding. There are about 12 different typestyles from which to choose. There are new ones coming out all the time. Typing on the machine is a joy. It feels like you are really pressing a key - like the IBM PC keyboard if you know what I mean. The typewriter does almost all of the work for you. The only thing you have to do is type. It even inserts and ejects the paper at the flick of a lever.

The best thing about it, is the fact that you can interface it to an apple using a serial card. However, there is one catch. You must also buy a special card to plug inside the typewriter. Put it this way, when you get done buying all the interface equipment for the thing, that equipment ends up costing as much as an Epson MX-80. I have seen the Olympia hooked up to an Apple at Hagen Office Equipment/Personal Business Systems (tel. 866-3441), and oh my gosh, it was beautiful! It produces the most dark, vivid and beautiful letter quality printing I have ever seen. I think it is worth spending the money to buy the interfaces for it. But, I guess you have to see it to believe it.

With all the features and good words I have mentioned, I feel that the Olympia Electronic Typewriters are the best around for the money. It carries a retail price of \$1485.00. Believe me, when you see this thing, you will like it alot.

In closing my article, I say that buying an Olympia Electronic Typewriter is a smart way to get both a typewriter and a letter quality printer. My family bought one. You can either input to it from the Apple's keyboard, or from it's own keyboard, or, use it as a normal typewriter. It's just incredible. (Editor's note: Tony is a new columnist to Mini'app'les. He is 15 years old.)

DOM #14 Continued from page 12

DON'T FENCE ME IN

A low-res game from the 'old library' that was copied in the movie TRON. The game is between 2 players that try to surround each other with moving lines. It is well documented.

INTERCEPT

Another low-res game from the 'old library'. This game is designed to test your skill in getting to parts of the screen without running over the path you have already traversed.

Announcements Continued from page 3

1000th MINI'APP'LES MEMBER

Erik V. Carlson recently became the 1,000th member of our club for which he receives a free DOM! We plan to honor the 10,000th member, maybe even the 2,000th!

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WIZARD BPO Parallel 16K Buffered I/F, Graphics inc.	\$170
PRINTER COMPANION letterhead carrier for MX-80	\$ 8

DISPLAYS:

BMC 12A high resolution (15 mhz) monitor	\$ 95
AMDEK 300 18 Mhz monitor with non-glare screen	\$135
BMC 13 Inch Color Monitor, Non-glare screen	\$300

MISCELLANEOUS:

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DOM #14

by Al Petersen

This DOM features a graphics packer/unpacker routine contributed by Chuck Boody that will allow you to store high resolution graphics on disk in as little as 8-10 sectors. That can be a savings of 70% over the usual bit mapping method. The hello program (MINI'APP'LES) shows one way to use these routines in an existing program. Also those of you who saw the formatting programs in the May & June newsletters and did not immediately type in the programs to try them out can now see how they work without having to enter them manually. There is a 6502 simulator program that will be quite useful for those of you who have always been interested in machine language programming, but didn't know where to start.

For those of you into adventure games, there is a rather nice version of JACK AND THE BEANSTALK and you don't get to be the giant! Also for those of you who wish to explore every possible Apple command try CATTLECAR GALACTICA and be prepared for unusual events. Lastly, there are 3 integer low-res games that are simple enough for children and fun enough to keep anyone interested for awhile.

I have been dipping into my store of old programs for this disk and really need some new material for the next DOM. The programs don't have to be elaborate and I can clean up some stuff if needed. Also, you get a free DOM for material that is used. Please give me your programs at the meetings, in person, or by phone and feel free to contact me if you wish to tell me what kind of software you want to see on the DOM's.

MINI'APP'LES

Hello program. Uses 'Unpacker' to display the logo and then will run 'CATALOG MANAGEMENT' if desired.

LOGO 14 (PACKED)

A 'packed' hi-res picture. It can be displayed with UNPACKER and is the logo for this DOM.

PICTURE PACKER

An Applesoft program to use the PACKER routines in a fairly well documented manner. It provides you with the ability to CATALOG the disk.

PICTURE DISPLAY

The other Applesoft program to allow one to display the 'packed' picture. It also has the CATALOG option and will switch to 'picture packer' with the '/' command.

JACK AND THE BEANSTALK

A fairly extensive adventure program. It has a save game option (if on a unlocked disk). Developed by M.A.C Software and contributed by Janelle Norris.

CATTLECAR GALACTICA

A dandy problem for you! It will let you test your knowledge of all APPLE commands and languages and provide some entertainment at the same time. By the inimitable Bruce Tognazzi.

APPLESOFT

Not really Applesoft nor is it 43 sectors. I leave it up to you to discover the true identity of this file. warning: do not erase this file even if you have Applesoft in ROM.

COMPUTER SIMULATOR

An excellent simulator of a 6502 which allows you to program it and then step through the program seeing all the registers and addresses change as you do it.

LIFE EXPECTANCY

A program to forecast your life expectancy by evaluating the effects of your personal lifestyle. It runs in a questionnaire type manner and explains some of the less obvious results to your answers. From the 'old library'.

WHITE'S FORMATTER

A program to demonstrate a method of formatting decimals in dollar and cents format. From Dave White and the June newsletter.

ONAN'S FORMATTER

Dave Onan's decimal formatter from the May 1982 newsletter is another way to get decimals points lined up.

MURRELL'S NEW INPUT

Mike Murrell's input routines to allow you to get input by analyzing the position and data at the cursor. Again from the May newsletter.

CRASH CARS

A low-res game of deceptive simplicity. It is like the arcade game but adds the problem of not allowing turns that crash into the outer walls. From the 'old library'.

MINI REVIEW

Swift's 1982 Educational Software Directory by Dan Buchler

Swift's 1982 Educational Software Directory Apple II Edition, Sterling Swift Publishing Company The book arrived unsolicited as a gratis review copy.

355 pages in a GBC plastic binder are printed in the same format as the Apple manuals. The book is nicely produced and typeset throughout. The purpose of the document is to list most software that might be of interest to the educational community. Several thousand individual programs are covered with a description for each varying in length from 2 lines to over a page.

Perhaps the organization makes sense to an educator, but I had difficulty finding things. The book is divided into 8 chapters with chapter titles such as 'Traditional Educational Publishers'. Within each chapter the publishers are listed alphabetically, and within each publisher programs are listed in apparently random order. The only way to find a program on a particular subject is to use the index which is very extensive and organized as a Master alphabetical index by program name, and again alphabetically by 'disciplin'. Disciplins are such things as 'Library Skills', 'Mathematics, Elementary School', 'Science, High School', etc. Since many program names are ambiguous, one just has to read through all descriptions for each program listed under a particular disciplin in the index. Page headings include only the chapter name. Clarity would have been improved if the publisher was carried forward from page to page. One has to carefully thumb backwards through many pages to find who is the publisher of a particular program that sounds interesting.

The descriptions themselves seem to be succinct and to the point. Prices are given in most cases and a reference is often included to where the program was reviewed in various educational journals.

MECC is listed under non-commercial software. 25 pages are devoted to MECC software.

I suspect that the book is very complete in covering what is available in educational software. I would think that it would be useful in the media

center of any school that uses Apple's in their curricula. The difficulty of finding items on a common subject makes it somewhat less useful than it might otherwise have been.

We thank the publisher for the opportunity to review the book.

APPLE + 68000 = DTACK GROUNDED

Status Report
by Dan Buchler

INTRODUCTION

In the June issue, we brought you a complete review of the DTACK GROUNDED 68000 attached processor board. Since this writer sees this particular product as of particular importance to the future of the Apple II, I plan to keep the membership informed about relevant happenings.

Following is some of that 'information':

DTACK have their 128k expansion board operational.

By the end of the year DTACK will be offering a board utilizing the newly announced Motorola 68008 microprocessor. This is a variation on the 68000 that uses an 8 bit rather than a 16 bit bus. It therefore can talk directly to Apple memory, but the board will be much slower than the regular DTACK 68000 board. Since there will be no on-board memory, the complete card will fit into an Apple expansion slot.

A DTACK board with a 12MHz 68000 is now available as an option. Such a configuration is 50% faster again than the regular 8MHz version reported on in the June newsletter. DTACK is also thinking about marrying a floating point microprocessor to the 68000 board.

According to Hal Hardenberg, DTACK's president, we will have to wait about 18 months before 68000 software has matured to the point that 6502 software currently has attained. Fortunately, there are sufficient entrepreneurs around that some useful and usable software will be available long before then. For example, an individual who recently bought a DTACK board, now has his Apple PASCAL 'connected' to the 68000 board. This person reports a speed improvement of 2x over regular PASCAL run-time. The same person plans to add a double precision capability to the PASCAL/68000 interface software.

The following article is from May 1982 Hardcore, the journal of BASUG. See below.

THE DISAPPEARING "IF" TRICK

By Ian Trackman

Digital computers (presumably so called because a scientist once poked his finger into a Ram socket to see how it worked) are fundamentally very simple-minded machines, distinguishing only between "Yes" and "No", "True" and "False" or, more specifically, "On" and "Off". The "On" is not a question of, whether you have plugged your Apple into the mains socket, but whether a specific location in the processor chip (the 6502 CPU) is or isn't carrying an electrical charge. By the time that a host of clever engineers and computer systems designers have worked on that electrical charge, it has been turned into the Basic "IF" function.

When your Apple finds an "IF", it carries out a series of calculations with the sole purpose of establishing whether or not the relevant part of the chip is electrically charged and therefore, whether the "argument" (that is, the formula, equation or whatever else that comes before the "THEN") is true or false. If the argument is true, Apple celebrates the fact by giving the argument full marks with a score of 1 out of 1. If the argument is not true, that is, if the "IF" test fails, it is awarded 0 out of 1. In the computer's simple On/Off world, there are no part-scores for "nearly true". (Please note that not all Basics adopt the same scoring system - some use 0 for True and -1 for False). Armed with its 0 or 1 result, "IF" then decides whether or not to execute the rest of the statement after the "THEN".

Let's now turn our attention to another Basic function, "NOT". "NOT" is like the compulsive liar in those puzzles of logic about the traveller who meets three strangers at the cross-roads, one who always tells the truth, one who sometimes lies and our friend "NOT", for whom "Yes is always "No", "True" is always "False", "False" is always "True", 0 is always 1 and 1 is always 0. Let's put "NOT" to the test :-

```
IF ( 6 = 2 * 3 ) THEN ....
```

"6 = 2 * 3" is our "argument". We'll keep it enclosed in brackets so that we can recognise it easily. As our argument is true, Basic gives it a score of 1.

```
IF ( 6 = 4 * 7 ) THEN ....
```

is false and gets 0.

```
IF NOT ( 6 = 2 * 3 ) THEN ....
```

Now, "NOT" inverts the situation and we get 0. Finally, :-

```
IF NOT ( 6 = 4 * 7 ) THEN ....
```

produces 1.

We could have put the last two examples in another way, using the "greater than" and "less than" functions, so :-

```
IF ( 6 > 2 * 3 ) THEN ....
```

and

```
IF ( 6 < 4 * 7 ) THEN ....
```

but there's method in our madness. (Wait and see !)

At this stage, we can't actually see the 0 or 1 score, since it's internal to the Basic interpreter. What we have established is that, in certain situations, an argument by itself or "NOT" plus an argument will produce a 0 or 1 in the Apple. Let's now try to find it. How about :-

```
PRINT ( 6 = 2 * 3 )
```

and sure enough, Apple replies with a 1. You'll find that it works properly with the other three examples.

Here's a slightly trickier example :-

```
A = 0 : PRINT ( A = 0 )
```

Since the argument "A = 0" is true, the result is 1. Moving on :-

```
A = 4 : PRINT ( A = 4 )
```

and the result is 1 (not 4 !).

If we add in "NOT", so :-

```
A = 0 : PRINT NOT ( A = 0 )
```

```
A = 4 : PRINT NOT ( A = 4 )
```

then 1 becomes 0. You can't say :-

```
PRINT < ( A = 0 )
```

because that produces a syntax error.

What happens if, instead of using an equation as our argument, we use a variable ? The answer is that the True / False test still works. However, we can't demonstrate the "True" condition with a straight-forward PRINT statement, since :-

```
A = 4 : PRINT ( A )
```

simply prints the value of the variable A, which is 4. On the other hand, we can show the "False" case with a "NOT" :-

```
A = 4 : PRINT NOT ( A )
```

which gives us 0. What Basic is doing here is evaluating whether A = 0. If it isn't, we score 1, which is inverted by the "NOT" to 0. If A has some other value, the argument "A = 0" is false and our True / False score is 0. Let's use "IF" to demonstrate the situation where the variable has a value other than 0 :-

```
A = 4 : IF ( A ) THEN PRINT "TRUE"
```

and we get "TRUE".

So here we have the beginnings of a powerful programming tool. If you want to test whether a variable equals 0 or has some other value, you don't have to say :-

```
IF X <> 0 THEN ....
```

but simply :-

```
IF X THEN ....
```

As you write your ultimate Adventure, you can include statements like :-

```
IF LAMP AND OIL AND NOT BLIND THEN ....
```

(LA, OI and BL are, of course, variables). Besides making for shorter code, there is another advantage in this construction - speed.

```
X = 10 : FOR I = 1 TO 5000 : IF X <> 0 THEN A = X : NEXT
```

takes approximately 23 seconds, whereas :-

```
X = 10 : FOR I = 1 TO 5000 : IF X THEN A = X : NEXT
```

takes only 14 seconds. Using "NOT" instead of "= 0" also produces time savings.

The other major use of this 0 / 1 idea derives from the fact that when you multiply a number by 1, it stays the same and when you multiply it by 0, it becomes 0. Let's justify the title of this article and make the "IF" disappear !

Now you see it :-

```
IF X = 10 AND Y = 20 THEN Z = 30
```

and - drum-roll, maestro, please :-

```
Z = 30 * ( X = 10 ) * ( Y = 20 )
```

and now it's gone !

What we are saying in this line of Basic is :-

```
IF X <> 10 and Y <> 20 then :-
```

```
Z = 30 * 0 * 0 (i.e. Z = 0)
```

```
IF X = 10 but Y <> 20 then :-
```

```
Z = 30 * 1 * 0 (i.e. Z = 0)
```

```
IF X <> 10 but Y = 20 then :-
```

```
Z = 30 * 0 * 1 (i.e. Z = 0)
```

```
IF X = 10 and Y = 20 then :-
```

```
Z = 30 * 1 * 1 (i.e. Z = 30)
```

Actually, that wasn't a very good example, since those brackets and multiplication add to Basic's computing time. However, there are two situations where the idea can be of great use. The first is where you want to have the equivalent of several "IF"s followed by another "IF" which applies to all of the cases. One method is to have a number of "IF" statements on different lines, each one followed by a "GOTO" to fall into the next main "IF" statement.

Extending our new method to such statements as

```
A = 5 * ( X = 10 ) + 10 * ( Y = 20 ) - 5 * ( Z = 30 )
```

we can handle the entire series of "IF"s in one go. Notice how we use the plus, minus and multiply operators as the arithmetical equivalents of "IF", "AND", "OR" and "NOT".

The second situation makes the "FN" (function) statement much more powerful. As you know, Applesoft will not handle multi-statement function definitions. It would be useful to be able to say something like :-

```
DEF FN A ( X )
IF B <= 50 THEN FN A = RND ( 1 ) * X
IF B > 50 THEN FN A = RND ( 1 ) * 100
FN END
```

which normally has to be done with a subroutine. But how about :-

```
DEF FN A ( X ) = RND ( 1 ) * (( B <= 50 ) * X ) + (( B > 50 ) * 100 )
```

Two final words of caution - using 0 / 1 control logic in a program makes it less portable and harder for others to understand instead of simple "IF THEN" constructions. Also, do some bench-mark timing tests if timing is important.

P.S. Now tell your friends that you understand about Boolean algebra !

BASUG'S HARDCORE

BASUG, British Apple Systems User Group, has about 2000 members scattered throughout the UK. Their very excellent monthly journal is called Hardcore!

Tidbits Continued from page 18

DISABLING RESET

The following tid-bit is courtesy of SCAN, Suncoast Apple News, Clearwater, Florida, July 1982.

The Auto Start Monitor ROM allows the application program to retain control when the RESET key is pressed. The easiest way to take advantage of this is to have the reset re-run the Applesoft program.

```
10 POKE 1010,102 : POKE 1011,213:
CALL -1169
20 REM
30 REM RESET will now re-run program
40 REM
```

```
100 POKE 1010,191 : POKE 1010,157:
CALL -1169
110 REM Back to normal now.
```



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HOME PROJECTS

by Roger Flint
771-2868

Well alot has happened since my first article. With the help of other members we have finished building the prototype of a power control center. This is the subject of this article.

Also we have built a prototype 16K language board which I am using right now, and it works just great! My next design project is a gameport extension box to be able plug in paddles & joystick at the same time. (Remember the joystick you built in the May issue). We have also finished a plexiglas stand to hold your monitor & disk drives. I am just putting the final touches on a home-brew Graphic Tablet, which should help alot in laying-out design for projects that get built.

I know Dan Buchler will be happy to see that project finished, so he won't have to find someone to do art work each month. (Did'nt need to re-do this month - Ed.)

I have been getting alot of calls from members who want to get a meeting going once a month, on building different projects. So I decided to try it, starting in August, on Sat Aug 14th. At the meeting, we will concentrate on getting your Power Control Center built. See ANNOUNCEMENTS, CONSTRUCTION PROJECTS elsewhere in this newsletter.

Well now, on to the details of this month's project. The power control center will make it easy to turn on all or part of your accessories. (It will

also work nicely with the Fan described in the May Call A.P.P.L.E. - Ed.) The biggest problem with the Apple is wearing out the switch in the back - you know the one you use every time a program hangs up. The replacement price is \$90 and you can't do it yourself as the power supply is a rivet-sealed unit. My box is wedged shaped, so put the plug receptacles in the large part and the fuse holders in the front small side. The switches light up so you will have no problem knowing which things are on.

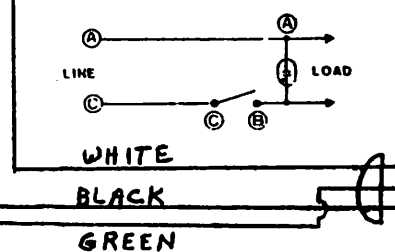
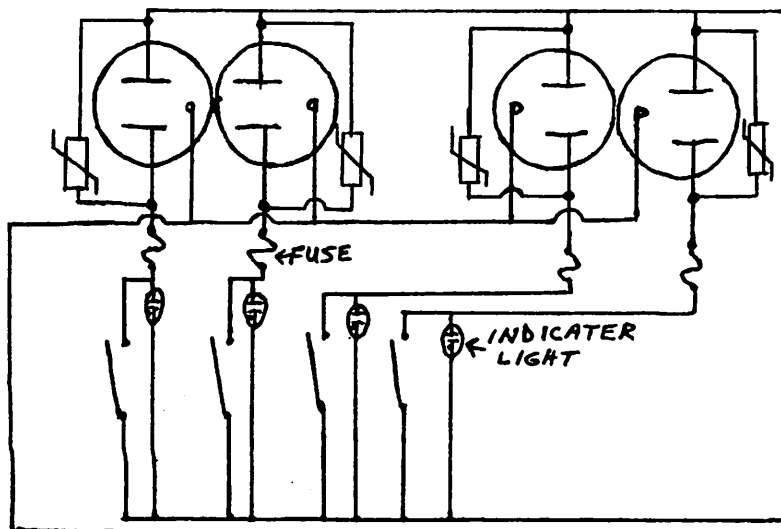
PARTS LIST

(Radio Shack part numbers except where otherwise indicated)

1. (1) Metal box 270-265, \$8.49
2. (4) Illuminated pushbutton switches, \$3.69 ea. 4 should be enough: TV, Monitor, Printer, Apple and one extra. 275-671
3. 10ft 3-wire #18 gauge, \$0.18 per ft., Menards 369-2965.
4. (2) Electric plug receptacle \$.59 ea., Menards 363-3652
5. (1) Grounded plug \$3.69, Menards 363-3335
6. (4) Thyrectors, 120 volt, 10 amp, metal oxide (sometimes called varistors) can be picked up from electrical supply house
7. (4) Fuse holder, 270-364 \$.89.

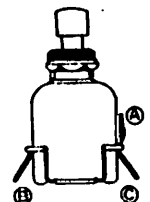
This is just examples of places and prices, if you can pick up better deals let me know so I can pass it on to everyone.

(Editor's note to newcomers: These articles, by Roger Flint, are not intended to tell you how to build the item, but rather to prepare you for a group construction project, which Roger hosts. The equipment quality is very high! If you are interested, it is suggested that you call him! Note that Knox Lueber and Budget Power have about same prices as Menards.)



Wiring Hookup of Illuminated Switches

275-671



SEPT NEWSLETTER

The next newsletter will probably be a flyer only consisting of 4 pages with announcements and no paid advertising. This is so that we can prepare for a large special 'Applefest' October edition. All members of record at mailing time in September will receive the October edition.

TID-BITS

by Dan Buchler

FLIP-FLOPPING HIRES PAGES

Somebody asked me the other day how to fill one HIRES page while displaying the other page. Your Applesoft manual, page 132 and 133, tells you how to turn on and off the screens, but the important location which tells Applesoft which page to work on is not mentioned. That is decimal 230. The following code will do the trick.

At the start of the code, assume that you will start with page 1:

```
HGR:  REM Clear Page 1
      Turn on Page 1 in
      HIRES graphic mode.
POKE -16302,0:
      REM Selects full page
      of HIRES screen
```

To plot in page 1 while page 2 is showing:

```
POKE 230,32 : REM Plot in Page 1
CALL 62450 : REM Clears Page 1
HPLOT.....
HDRAW..... etc, etc
```

```
POKE -16300: REM Switches from
              Page 2 to 1
```

To plot in page 2 while page 1 is showing.

```
POKE 230,64 : REM Plot in Page 2
CALL 62450 : REM Clears Page 2
```

```
HPLOT.....
HDRAW..... etc, etc
```

```
POKE -16290: REM Switches from
              Page 1 to Page 2.
```

GOTO 15

Applesoft Files Continued from page 8

Most machine language programs are memory location dependent. The jumps and subroutine calls are to memory locations not line numbers or labels. If we leave our program the way it is now, it will load the machine language part at the end of the BASIC program, so we must move it to its correct location in memory. This is done from the Applesoft program.

These lines should be among the first lines executed in the BASIC program.

```
70 D = 704: L = 267: P = 256
```

The "D" is the starting address of the machine code segment. The 704 is the decimal equivalent of the 2C0 HEX. The length, 10B HEX, converts to 267 decimal. The "P" is the page size. The next line gets the monitor memory move routine so we can put the machine code back where it belongs. It is a JMP \$FE2C.

```
71 POKE 512,76: POKE 513,44:
    POKE 514,254
```

Now we must find and fill in the parameters for the memory move.

```
72 I1 = PEEK(175) + P *
      PEEK(176) - L :
    REM START
```

```
73 I2 = I1 + L - 1: REM END
```

```
74 POKE 61,I1 / P:
    POKE 60,I1 - P * PEEK(61):
    POKE 63,I2 / P:
    POKE 62,I2 - P * PEEK(63):
    POKE 67,D / P:
    POKE 66,D - P * PEEK(67)
```

```
75 CALL 512: REM MOVE DATA
```

```
76 CLEAR: REM FORGET I1,I2,D,L,P
```

The last thing to do is delete the line that loaded the machine code. In this example it was line 70 which we deleted by using that number for one of our new lines. If the old line was 'BRUN FILENAME', then it must be changed to 'CALL XXX' where XXX is the decimal starting address of the machine code segment.

At last, you can SAVE your program. Each time you RUN it the machine code will be loaded with the BASIC file.

NOTE: You are free to modify the BASIC program by adding, changing or deleting lines, but programs like Applesoft RENUMBER will destroy the code portion. If you must renumber, you can attach the code portion again.

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Announcements Continued from page 10

APPLE EDUCATION

Computer Gametown, Golden Valley is offering some interesting sounding classes. These classes are not cheap. We have no feedback yet as to the quality of the instruction, but we are listing some of classes as a public service. If you go to the classes, let us know how you liked them.

Little Computers, see how they run
4 3-hour sessions, starting 8/24, 6-9pm,
\$100.

Business Computing, cut down to size
5 3-hour sessions starting 8/30, 11-5pm,
\$100.

Introduction to Basic Programming
4 3-hour sessions. Classes start 8/4,
8/18 and 9/1 and are held 6-9pm. \$100.

The following are tentative and will be held if the demand exists:

Introduction to Assembly Language
2 3-hr sessions, \$50.

Creating Arcade Games
2 2-hour sessions. No programming knowledge required. Will include a software package called the Arcade Machine. Total price \$70.

Computer Graphics Made Easy
3 3-hr sessions, \$125. Includes software package "A Graphic Magician".

Using the Apple
2 2.5-hr sessions, \$50.

Computer Gametown will provide a 10% discount on hardware and software to any member showing his/her membership card.

IAC APPLE TECH NOTES

Until recently, the International Apple Corps distributed technical information in the form of ApNotes. Many of you have sets. ApNotes have been discontinued to be replaced by Apple Tech Notes. The first printing will contain over 450 pages. We must wait and see whether the information is useful or not. Frequently the old ApNotes were so far out of date as to be useless to most people.

The club will receive a set of the Tech Notes free. Individuals may order a set for \$64.95 from local dealers and may receive a discount coupon for \$7.50 through the club or the IAC. (That's right nearly sixty five dollars!). We will attempt to find out if we may copy the set we receive for redistribution to club members.

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ADS, ADS and ADS

by Eric Holterman

As our club has grown, the newsletter has grown. As more Special Interest Groups and area Branches are formed, the importance of our newsletter as a means of tying our club together and informing members of our activities increases. With over 1,000 members, circulation is up. Along with this comes the increasing cost of distributing the newsletter and a heavier load on our Newsletter Editor, Dan Buchler.

Advertising in the newsletter has grown substantially over the past year. Much of it has been by club members engaged in an Apple related business. It is now an important source of revenue for the club and will be more important in the future. Our dues are low, only \$12 a year, and newsletter advertising is a major reason dues have not risen faster than they have.

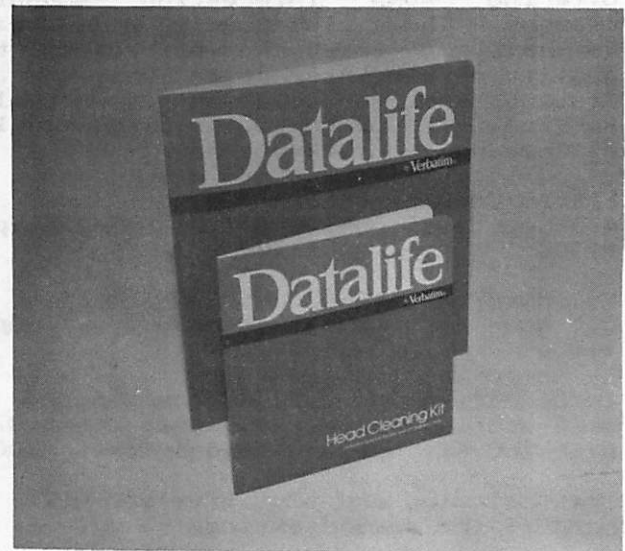
More advertising, while not overloading our newsletter with it, and retaining and servicing advertisers are the basic objectives of my job as Advertising Coordinator. By taking on the search for new advertisers and handling much of the work created by the ads, I hope to take some of the load off Dan's shoulders.

Your HELP is needed. Referrals to new advertisers where you have some contact would be great. Beyond this, comments on ads and ad policy are important in making the newsletter more responsive to your needs. While there is no "Good Computing Seal of Approval", we don't knowingly run Ads not legitimate in every way. If you feel things are not 'as advertised', let me know. Favorable comments are just as welcome. I can be reached at:

(612) 332-8460 or
19 S. First St. B1704,
Mpls., MN 55401.

Take a good look at the Ads in the newsletter. You may find what you are looking for. Over the past six months, I have made purchases from four of our advertisers and have been completely satisfied with quality, service and price. Mini'app'les can't guarantee you the same result, but I see no reason why you shouldn't expect the same. (Eric, who only recently joined Mini'app'les, is another one of our Unsung Heroes. He has devoted a considerable amount of his time to supporting the club and has been very successful in promoting advertising in the newsletter. He has also done a considerable amount of work in support of Applefest. Thank you Eric. - Ed.)

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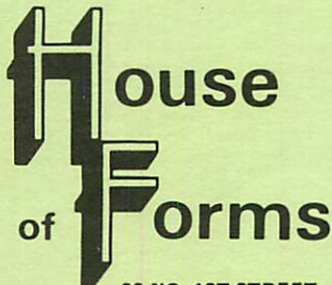
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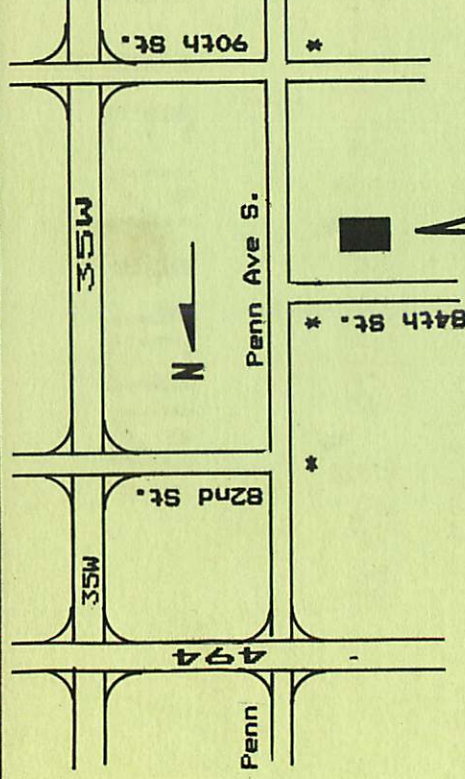


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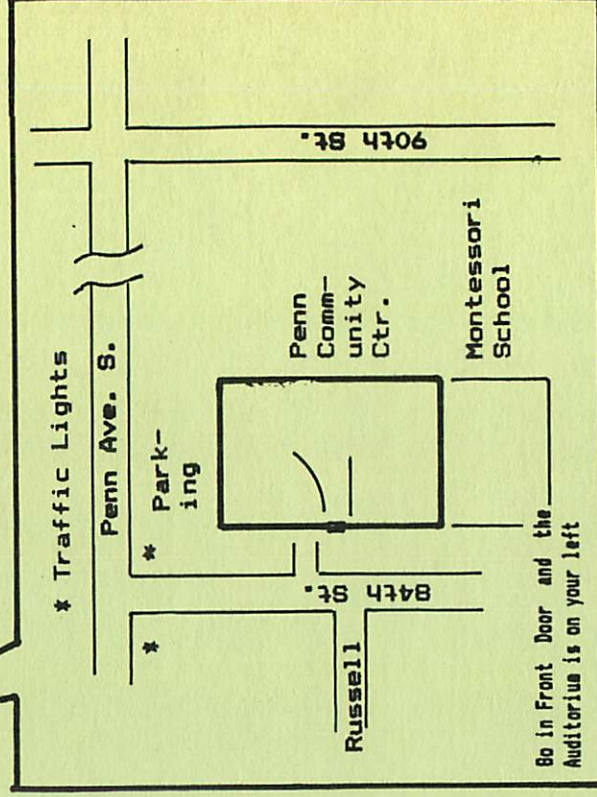
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