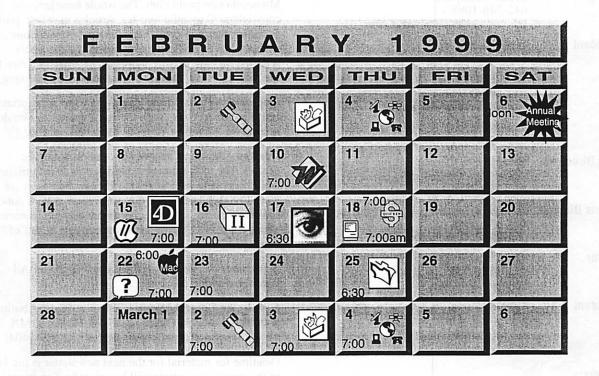
miniapp'les newsletter the minnesota apple computer users' group, inc.





Board of Directors

mini'app'les members welcome. Byerly's 7171 France Ave. S., Edina Bruce Thompson, 612-546-1088



ClarisWorks SIG

Southdale Library 7001 York Ave, Edina John Hunkins, Jr., 651-457-8949



Telecommunications SIG Epiphany Lutheran Church

1414 East 48th Street S, Mpls Bert Persson, 612-861-9578



Ånnual Meeting

Brooklyn Cntr Community Cntr, 6301 Shingle Creek Pkwy Brooklyn Center Denis Diekhoffs, 612-920-2437



Microsoft Word SIG

2850 Metro Drive Rm 124, Blmgtn Tom Ostertag, D 612-951-5520 E 651-488-9979



Macintosh Main

No meeting this month; Please attend the Annual Meeting on Feb 6 Denis Diekhoff, 612-920-2437



Apple II/GS Main SIG

Augsburg Park Library 7100 Nicollet, Richfield Tom Gates, 612-789-6981



Fourth Dimension SIG

8200 Humbolt Ave South 2nd Flr. Conference Rm. Blmgtn David Ringsmuth, 612-853-3024



Apple II Novice SIG

Ramsey County Library 2180 Hamline Avenue, Roseville Tom Gates, 612-789-6981



Photoshop

Source Incorporated 2000 Energy Park Drive, St Paul Denis Diekhoff, 612-920-2437



Macintosh Consultants SIG

Embers 7525 Wayzata Blvd St. Louis Park Bob Demeules, 559-1124



Quicken/Investment SIG 2850 Metro Drive, Rm 124 Bloomington

Dale Strand, 612-835-5872



Meet Your Macintosh SIG

Merriam Park Library Marshall & Fairview, St Paul Brian Bantz, 612-956-9814



Macintosh Novice SIG Merriam Park Library

Marshall & Fairview, St Paul Tom Lufkin, 651-698-6523



FileMaker Pro SIG

Partners, Suite 5 1410 Energy Park Drive, St Paul Steve Wilmes, 651458-1513



P.O. Box 796, Hopkins, MN 55343

Board of Directors:

President

Bruce Thompson

612-546-1088

bthompson@macconnect.com

Vice President

Denis Diekhoff

612-920-2437

Secretary

Jacqueline Miller 612-890-2071

jm@jmillerassociates.com

Treasurer

Don Walz

651-426-5602

Marketing Director

Brian Bantz

bdbantz@bitstream.net

612-956-9814

Publications Director

John Hunkins, Sr

651-457-8949

jhunkins@tcilink.com

SIG Director

Bert Persson

612-861-9578

bpersson@isd.net

Past President

Eric Jacobson

651-603-9111

ej@jatex.com

Coordinators:

Membership

Erik Knopp

Mac Software

Bryan Lienke

Apple II

Owen Aaland

Introduction – This is the Newsletter of mini app'les, the Minnesota Apple Computer Users' Group, Inc., a Minnesota non-profit club. The whole newsletter is copyrighted © by mini app'les. Articles may be reproduced in other non-profit User Groups' publications except where specifically copyrighted by the author. (Permission to reproduce these articles must be given by the author.) Please include the source when reprinting.

Questions – Please direct questions to an appropriate board member. Users with technical questions should refer to the Members Helping Members section.

Dealers – mini app les does not endorse specific dealers. The club promotes distribution of information which may help members identify best buys and service. The club itself does not participate in bulk purchases of media, software, hardware and publications. Members may organize such activities on behalf of other members.

Advertisers – For information, see Newsletter Ad Rates box within this issue.

Newsletter Contributions – Please send contributions directly to our Post Office, Box 796, Hopkins, MN 55343 or upload them to our BBS at 612-595-9404.

Deadline for material for the next newsletter is the 1st of the month. An article will be printed when space permits and, if in the opinion of the Newsletter Editor or Manager, it constitutes material suitable for publication.

Editor/Publisher: Tom Ostertag 651-488-9979

Newsletter Layout: John Hunkins

mini app les BBS – 612-595-9404, (co-located on Twin City Interlink BBS), 24 hrs. Settings: 8-1-0. Call in with FirstClass® Client software or any text-based terminal program.

mini app'les Voice Mail - 651-229-6952

mini app les WWW site: http://www.miniapples.org



The mini app les Newsletter is an independent publication not affiliated, sponsored, or sanctioned by Apple Computer, Inc. or any other computer manufacturer. The opinions, statements, positions, and views herein are those of the author(s) or editor and are not intended to represent the opinions, statements, positions, or views of Apple Computer Inc., or any other computer manufacturer. Instead of placing a trademark symbol at every occurrence of a trade-marked name, we state that we are using the names only in an editorial manner, to the benefit of the trademark owner, with no intention of infringement of the trademark.

CHANGE OF ADDRESS

Moving? Going to be away from home and leaving a forwarding address with the Post Office? Please send us a Change of Address when you are informing others. By using a moment of your time and a few cents to drop us a card, you save the club some money and you get your newsletter delivered promptly to your new address. If you don't inform us, the Post Office puts your newsletter in the trash (they don't forward third class mail) and charges the club for informing us of your new address. Change of Address should be sent to the club's mailing address: mini'app'les, Attn: Membership Director, Box 796, Hopkins, MN 55343.



Table of Contents
March 1999 Preview3
Mac eDOM #987 - Productivity5
Directions to the Brooklyn Center Community Center5
February Digital Imaging SIG5
February Mac Main SIG Canceled!6
800,000 iMacs Sold in First 139 Days6
Annual Meeting Notice
The new Macs: what they are, what they aren't8
Clarification on MindExpander Hands-on report
Apple and the Year 20009
USB and You10
Apple Launches New Desktop Lineup for 199912
Board of Director Nominations Sought
Hands on: Grammarian and TechTool Pro 2.1.113
Final comments on Mac maintenance utilities
Discount Software & Macs Recycled15
mini'app'les Gaming Group (mGG) Wants You!15
Ongoing Deals for mini'app'les Members
New Lisers 11 1

March 1999 Preview

Here is our tentative calendar for March 1999. Please pencil these events on your calendar. As always, when doubtful of a SIG date, time, or location, check with one of the following:

Our BBS, the Calendar Folder in the Conferences Folder Our Voice Mail Telephone number: 651-229-6952 The cognizant SIG Leader

March 2	Board of Directors meeting
March 3	AppleWorks nee ClarisWorks SIG
March 4	Telecom SIG
March 8	Apple II/GS Main SIG
March 10	Microsoft Word SIG
March 11	Macintosh Main SIG
March 15	Fourth Dimension SIG
March 16	Apple II Novice SIG
March 17	PhotoShop / Digital Imaging SIG
March 18	Macintosh Consultants
March 18	Quicken/Investing SIG
March 22	Meet Your Macintosh SIG, 6:00pm
March 22	Macintosh Novice SIG, 7:00pm
March 25	FileMaker Pro SIG
	March 4 March 8 March 10 March 11 March 15 March 16 March 17 March 18 March 18 March 22 March 22

Members Helping Members

Need Help? Have a question the manual doesn't answer? Members Helping Members is a group of volunteers who have generously agreed to help. They are just a phone or (or an e-mail) away. Please call only during the appropriate times, if you are a member, and own the software in question.

Apple II / IIGS Software & Hardware	1, 6, 9
ClarisDraw	3
ClarisWorks	2,8, 9, 10
FileMaker Pro	2,0, 5, 10
FirstClass	2
HyperCard	12
MacWrite Pro	2
Microsoft Excel	_
Microsoft Excel	3, 6, 7
	6
MYOB	7
PhotoShop	4
Quicken	3, 7
QuickBooks and QuickBooks Pro	7
Mac OS 7	9
Mac OS 8	
WordPerfect	5
Classic Macs	12
Cross-Platform File Transfer	6
iMacs	J
Networks	12
New Users	11, 12
PowerBooks	12
I OWCIDOOK3	12

1.	Les Anderson	651-735-3953	DEW
2.	Brian Bantz	612-956-9814	DEW
3.	Mike Carlson	218-387-2257	D
4.	Eric Jacobson	651-645-6264	D
5.	Nick Ludwig	612-593-7410	DEW
6.	Tom Ostertag	651-488-9979	EW
7.	Ardie Predweshny	612-823-6713	DEW
8.	Owen Strand	612-427-2828	D
9.	Bruce Thompson	612-546-1088	EW
10.	Pam Lienke	651-457-6026	EW
11.	Tom Lufkin	651-698-6523	EW
12.	Ben Stallings	612-870-4584	DEW

D: Days, generally 9 a.m. to 5 p.m. E: Evenings, generally 5 p.m. to 9 p.m. W: Weekends, generally 1 p.m. to 9 p.m.

Please call at reasonable hours, and ask if it is a convenient time for them. By the way, these volunteers can also be contacted on our BBS. We appreciate your cooperation.

If you would like to be a Members Helping Member volunteer, please send an e-mail message to John Hunkins, Sr. on our BBS, or call him at 651-457-8949, with your name, telephone number, contact hours, and the software or hardware areas you are willing to help others.

Newsletter Ad Rates

1/12 page 2.25" Width x 2.5" Height	. \$5	(
1/6 page 2.5" Width x 5" Height	\$10]
1/3 page 2.5" Width x 10" Height Vert or 5.5 H	\$20	
1/2 page 7.5" Width x 5" Height (save 5%)	\$30	
2/3 page5" Width x 10" Height (save 7%)	\$40	
Full page 7-1/2" Width x 10" Height (save 15%)	\$60	

```
Outside back cover .7-1/2" Width x 7-1/2" Height ...$50 Inside back cover .... 7-1/2" Width x 10" Height ....$60
```

All ads must be prepaid and submitted on electronic media. Ads of \$20 and under must run for a minimum of three months.

Mail inquiries to: PO Box 796, Hopkins, MN, 55343 Phone inquiries to: John Hunkins, Sr. 651-457-8949

Mac eDOM #987 - Productivity

Copyright © 1999 mini'app'les-January 1999 Submitted by Bryan Lienke



Excalibur

Excalibur is a freeware spelling checker that is also LaTeX aware. Excalibur will offer suggestions for how to correct a word and it can spell check the clipboard (This makes it a good spelling checker for any text based application such as Alpha or SimpleText) Excalibur also works with Eudora, BBEdit, MT NewsWatcher, ClarisWorks, WordPerfect, and any other program that supports Word Services. Another nice feature of Excalibur is that you can teach it about new LaTeX commands and environments that you define as well as creating your own dictionaries. Excalibur

works on any plain TEXT file and on any formatted files via Word Services. You will need System 6.0.5 or higher to run Excalibur. It will run on any Macintosh from a Mac Plus on up. If you are running System 7 or greater, there is balloon help. The "Standard Dictionary" distributed with Excalibur has over 158,000 words. British, Catalan, Dutch, French, German, Italian, Norwegian and Spanish dictionaries are also available.



MiniCalendar

MiniCalendar is a small and elegant system calendar. Its main goal is to provide the user with a basic calendar for any month between January 1582 and December 29940.

MiniCalendar is not designed to

replace full function date books, rather it is designed to complement such programs. Programs such as Claris Organizer or Now Up-To-Date excel at managing appointments and dates, but are clumsy when it comes to looking up what day your birthday is going to fall on next year. MiniCalendar fills this niche nicely. Since MiniCalendar is small and easy enough to use, you will want to leave it running so you will always have access to a calendar.

As an added bonus, if you are a Kaleidoscope user, MiniCalendar 2.0 will use the current Kaleidoscope color scheme to create a more unified system appearance. You will want to check out this feature.

Directions to the Brooklyn Center Community Center

Elsewhere in the newsletter is an article about our annual meeting at the Brooklyn Center Community Center along with a map to the center. The star on the map may not be in the correct location. Here are the written directions to assist you.

From the West

Take I-94 east to the Shingle Creek Parkway exit. At the stop light at the end of the exit, continue straight across Shingle Creek Parkway into our parking lot. Park and enter on the lower level.

From the East

Take I-94 or I-694 west to the Shingle Creek Parkway exit. At the stop light at the end of the exit, take a right (south over the freeway). At the first stop light, turn right into our parking lot. Park and enter on the lower level.

From the South - Highway 100

Going north, exit at 57th Avenue North / John Martin Drive. At the end of the exit, go straight through the intersection (57th Avenue North) to John Martin Drive; turn left (onto bridge over highway). At the next street light, turn right onto Shingle Creek Parkway. Go to the second stop light and turn left into our parking light. Park and enter on the lower level.

From the North - Highway 100

Going south, take a right exit off Highway 100 onto 57th Avenue (County Road 10; go to the first stop light and turn right onto Shingle Creek Parkway. At the last stop light before the freeway bridge, turn left into our parking lot. Park and enter on the lower level.

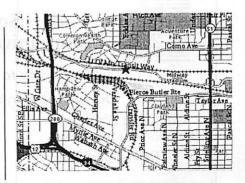
February Digital Imaging SIG

by Denis A. Diekhoff

Steve Rile of Source Inc., has invited us to tour his commercial printing facility for our February 17 meeting. This is an excellent opportunity to see the creative and business application of Apple technology. The meeting time is 6:30 pm and the plant location is 2000 Energy

Park Drive, St. Paul, between Snelling Avenue and Hwy 280. See adjacent map.

Stragglers beware! If your style is to arrive late, please accommodate us this once, and be there early. This is a secure building and no one is available to watch the door after 6:30.



February MacMain SIG Canceled!

by Denis Diekhoff

I have canceled the February MacMain SIG which normally would have been on February 11. Please consider attending the Annual Meeting on Saturday, February 6. The presentations and business which normally would have been presented at MacMain will be presented at the Annual Meeting.

Elsewhere in this newsletter there is an article about the annual meeting, a map, and directions. I plan to see you there.

800,000 iMacs Sold in First 139 Days

iMac Continuing to Attract New Users and Wintel Converts

Submitted by David M. Peck

MACWORLD EXPO, SAN FRAN-CISCO — Jan. 5, 1999 — Sales of Apples iMac continued very strong through the holiday season and year-end, with 800,000 units sold since the product shipped on August 15. iMac is the fastest-selling computer in Apples history, and continues to attract significant percentages of first-time computer owners and Wintel computer converts, according to updated buyer surveys.

During iMacs first 139 days, an iMac was sold every 15 seconds of every minute of every hour of every day of every week, said Steve Jobs, Apples interim CEO. iMac is truly the Internet-age computer for the rest of us, and it is bringing a lot of new people onto the Internet.

An iMac buyer survey conducted by the independent firm Audits & Surveys Worldwide in December 1998 revealed that the mix of firsttime buyers and Wintel converts remains high. For iMacs purchased from October through early December 1998, approximately 32 percent were purchased by first-time computer owners, and another 13 percent were purchased by Wintel converts totaling almost 45 percent of iMac buyers who are new to the Macintosh platform. The remaining 55 percent are Macintosh owners who are either adding new systems or replacing old ones. These results are similar to the initial iMac buyer survey conducted in September 1998, which found that approximately 29 percent of iMac buyers were first-time computer owners and just over 12 percent were Wintel converts.*

iMacs overall ease of use and easy Internet access remain the primary reasons buyers are selecting iMac. More than 80 percent of all iMac owners are using their iMacs to access the Internet, with 65 percent surfing the web on their first day. Additionally, 42 percent of those accessing the Internet have already purchased products or services over the Internet.

Sales of iMac, which has garnered numerous product of the year awards for its innovative styling and all-in-one design, have contributed to solid gains in Apples market share, and renewed interest from customers, channel partners and software developers. A wide range of software titles and third-party peripherals, also announced today, attest to the market resurgence of the Macintosh.

Apple Computer will formally report financial results from its fiscal first quarter on Jan. 13, 1999.

Apple Computer, Inc. ignited the personal computer revolution in the 1970s with the Apple II, and reinvented the personal computer in the 1980s with the Macintosh. Apple is now recommitted to its original mission-to bring the best personal computing products and support to students, educators, designers, scientists, engineers, businesspersons, and consumers in over 140 countries around the world.

* Based on the Audits & Surveys Worldwide telephone survey of U.S. iMac buyers who purchased through a representative sample of regional resellers, mail order distributors and computer superstores/consumer electronic stores, during the period from Oct. 1, 1998 to Dec. 7, 1998. A total of 1,315 telephone surveys were completed.



Cactus Software & Communications, Inc.

"Sharp and to the point"

Documentation Services for:

Computer Software Mechanical Systems

612 / 757-6916

Technical Manuals Training Courses Fax 757-4515

MH Computing

Macintosh™ Consulting Individual & Group Training Computer Problem Assistance

Mike Carlson

(218) 387-2257 (Grand Marais, MN)

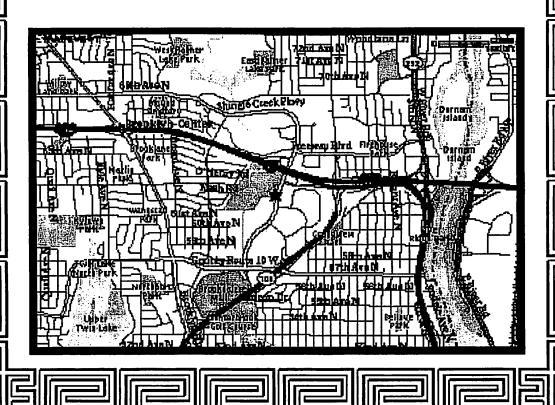
mhcnvc@boreal.org

FileMaker® Solutions Alliance



From High Noon to 9 pm, on Saturday, February 6th, 1999, mini'app'les Annual Club Meeting will be held at the Brooklyn Center Community Center's Constitution Hall. The meting room adjoins the heated swimming pool and water slide which you and your family may use for a small fee. The meeting will include presentations and demonstrations as well as a pot luck buffet. The Club will provide smoked turkeys, plates etc. There will be a brief business meeting including introduction of the board nominees. The mini'app'les Gaming Group will facilitate an ongoing war; contact John Hunkins Jr for details. There will be videos of Apple and computer related TV programming.

And More!



The new Macs: what they are, what they aren't

by Dennis Sellers dsellers@maccentral.com January 11, 1999, 6:00 am ET reprinted from MacCentral.com with permission

[MacCentral Editor's Note: Don Crabb's First Look report on MacCentral.com of the new G3s makes a nice addition to this report]

Apple's new line of Power Macs are state-of-the-art in features and design. They sport new copper-based PowerPC processors running up to 400MHz and the industry's newest and fastest 2D-3D graphics accelerator chip, the just-released ATI RAGE 128.

Apple has also "thought different" in their design. There are no serial ports and no on-board SCSI (though a SCSI card is optional). For the first time a Mac has inherent support for the high end FireWire connectivity technology. FireWire boasts 15 watts of bus power and support for peer-to-peer, multiple Mac link-ups. The first FireWire printer targeted to the new machines was the Epson 5000 Pro, which was on display in the Apple pavilion at last week's Macworld Expo in San Francisco.

Besides two 400 Mbps Firewire ports the new G3s also include industry-standard 10/100BASE-T Ethernet and USB (two ports), all on the motherboard.

They're housed in a translucent

minitower enclosure with a revolutionary access mechanism that simplifies access and expansion. A translucent blue and ice minitower enclosure provide what Apple describes as the industry's easiest access to expansion slots and memory.

Contrary to the flurry of pre-Macworld Expo predictions, speculation and hype, the new computers resemble the iMac in their curvy design and color scheme instead of a smoky blue, sinister appearance. The machines are priced much lower than anyone expected.

The new G3s are targeted toward professionals who want to run the most powerful image-editing packages, home users looking for a machine that can handle the latest in graphics-intensive games and Internet applications, and educators who want a high-performance machine that is a solid investment for the future.

Key features of the new Power Mac G3 line include:

- * The fastest PowerPC G3 microprocessors yet, running at 300MHz, 350MHz, and 400MHz, with support for up to 1 GB of DRAM in 4 DIMM slots.
- * ATI RAGE 128 graphics controller with 16MB SDRAM graphics memory and support for QuickDraw 3D RAVE and OpenGL.

- 100MHz system bus for fast data through-put.
- * Increased expansion options through three 64-bit 33MHz PCI slots; one 32-bit 66MHz PCI slot for graphics.
- * Fast networking through 10/100BASE-T Ethernet.
- * Storage choices including Ultra ATA-33 and Ultra2 SCSI LVD hard drives
- * ADB to support customers' current displays and add-ons.

The new Power Macintosh G3s are available immediately via The Apple Store and Apple Authorized Resellers, with over 10,000 build-to-order (BTO) configurations, including industry-first options for DVD-RAM optical storage and soon to be available 100GB of disk storage and Gigabit Ethernet communications. Standard configurations range from US \$1,599 to \$2,999.

Two new Mac Server G3 configurations are also available and include a license for AppleShare IP 6.1; a 10-client license for Apple Network Assistant 3.5; and, SoftRAID 2.5.1 for enhanced performance and security through striping and mirroring of hard drives. BTO options are also available. Prices for standard configurations range from \$3,299 to \$4,999.

© Copyright 1999 MacCentral, Inc. All rights reserved.

Clarification on MindExpander Hands-on report

by Ben Wilson bwilson@maccentral.com January 14, 1999, 9:30 am ET reprinted from MacCentral with permission

It seems that my hands-on review of MindExpander earlier this week has caused some confusion. To clarify, here is a revised version of that report: MindVision, a small company that made a splash at the Macworld Expo in San Francisco with an iMac-replica Volkswagen Beetle, has produced a new piece of

software which promises to simplify the process of expanding various file formats by offering decompression of virtually all Stuffit formats as well as MacBinary encoded files. However, until the next release of MindExpander, Stuffit Expander 5.x (freely available via download), provides a comparable, and in certain ways, a more capable, solution.

The two main virtues of this application are speed and size. MindExpander was extremely quick at expanding both large and small

files in our testing, and doesn't require any special extensions for performance or added capabilities (like Stuffit Expander). The app also uses less than 1 meg of memory, which is higher than Stuffit Expander's base requirements, but doesn't require the loading of the "Stuffit Engine" required to obtain full functionality. Even without the engine, however, Stuffit Expander currently offers a broader range of expansion capabilities. A Feb. 1st release of MindExpander promises to

change this situation by offering more format expansion capabilities.

Both Stuffit Expander and MindExpander offer similar speed and compactness, though the latter lacks some format capabilities. This release of MindExpander seems more like a show of technology (since MindVision apparently reverse-engineered the Stuffit decompression routines), than a finished product. With the February 1st release, however, the MindExpander alternative should become more compelling and provide a true alternative to Aladdin products. In fairness to both

companies, we will do a complete comparison when MindExpander is released in its final form.

© Copyright 1999 MacCentral, Inc. All rights reserved.

Apple and the Year 2000

(Excerpted from http://www.apple.com/about/year2000 /y2kconsumer.html) How Apple Consumer Products handle the Year 2000 Submitted by Bruce Thompson

Summary

Certain releases of Apple's consumer applications are Year 2000 compliant. These applications accept and recognize dates well into the 21st century, as described below. These applications will correctly handle the leap year in 2000.

This document discusses how Apple's consumer products will handle dates in the Year 2000 and beyond. These products allow the convenience of using four-digit explicit (dd/mm/yyyy) or two-digit assumed (dd/mm/yy) dates in data entry and in calculations and other functions. This document explains exactly how each product handles dates and what impact, if any, the turn of the millennium will have.

Unless otherwise noted, Apple's consumer applications rely on the date format supplied by the operating system. Products that use the date algorithms of the Mac OS and Windows operating systems will take advantage of future changes to these operating systems. This also means that U.S. and non-U.S. customers may use the date format standard accepted within their respective countries. For current information about Year 2000 issues regarding such operating systems, we recommend that you refer to the Year 2000 web pages for Apple and Microsoft directly for more information.

If the operating system is set to display explicit, four-digit years

(mm/dd/yyyy), and all dates in a document are entered with four-digit years, then the dates will not be ambiguous and operations involving dates should perform as expected. However, interpretation of two-digit years depends not only on the date being entered, but also on the year in which the date is or was entered. The rules for newly-entered dates also apply when a date field is modified. Once entered or modified, a date and its interpretation will not change. Please carefully read the details in this document which describe how each specific product interprets two-digit years.

We strongly recommend that customers take a complete look at their information systems to ensure they transition smoothly into the next century. For example, not all mainframe programs may function properly at the Year 2000. If a consumer application is used to access such information, Year 2000 issues may arise. Some PCs also have a problem that resets the system date to 1980 when the computer reaches the Year 2000. This problem is created by flaws in the computer hardware and in low-level BIOS software provided by other vendors. In addition, software developers and customers that create solutions based on Apple's consumer applications to collect, store and manipulate dates may have problems if they have not properly accounted for the Year 2000. Customers must also take responsibility for the accuracy of the data that has been entered under either the two-digit or four-digit method. It is important for customers to be aware of such issues

and take appropriate measures to address these and other related issues.

This document is subject to change without notice.

Products:

AppleWorks 5.0 ClarisWorks 4.0 (and newer) Organizer 2.0 ClarisImpact 2.0 Em@iler 2.0 ClarisDraw 1.0 AppleWorks 5.0 & ClarisWorks AppleWorks 5.0 and

ClarisWorks 4.0 and 5.0 are Year 2000 compliant. All documents created prior to the Year 2000 will retain dates as they were entered. Additionally, the Year 2000 is recognized as a leap year. The relevant portions of AppleWorks—spreadsheet cells and database fields, and calculations—can store dates through the year 9999.

AppleWorks attempts to intelligently translate 2-digit year entries into the correct 4-digit year. For example, if "4/5/98" is entered, the computer would logically interpret this date as 4/5/1998. To interpret the 2-digit years, the computer uses a set of "rules." These rules are discussed below for the Mac OS and Windows versions.

Mac OS Rules

Prior to the Year 2000,

Years 11-99 will be interpreted as 1911-1999, and

Years 00-10 will be interpreted 2000-2010

Beginning in the Year 2000, Years 91-99 will be interpreted as 1991-1999, and Years 00-90 will be interpreted as 2000-2090

Beginning in the year 2011, Years 00-99 will be interpreted as 2000-2099

Windows Rules

Years 11-99 will be interpreted as 1911-1999

Years 00-10 will be interpreted as 2000-2010

If you want to enter a date which doesn't conform to the computer's 2-digit rules (i.e., 2908), you need to remember to do two things:

On Mac, set the Date & Time control panel to "Show Century"

- 1. On Windows, set the Regional Settings control panel to a date style with a 4-digit year (mm/dd/yyyy)
- 2. Enter all dates in the document & endash; not just the non-conformist dates & endash; with the 4-

digit year

Organizer 2.0

Organizer attempts to intelligently translate 2-digit year entries into the correct 4-digit year. For example, if "4/5/98" is entered, the computer would logically interpret this date as 4/5/1998. To interpret the 2-digit years, the computer uses a set of "rules." These rules are as follows: Prior to the Year 2000.

Years 00 and 10 will be interpreted as 2000 through 2010, and

Years 11 and 99 will be interpreted as 1911 through 1999

*The dates immediately display as four-digit years when the field is exited, and will not change at the turn of the century. After the year 1999, Years between 00 and 40 will be interpreted as 2000 through 2040, and

Years between 91 and 99 will be interpreted as 1991 through 1999

*Other dates revert to random years when the field is exited.

ClarisImpact 2.0

ClarisImpact 2.0 accepts and manipulates dates up to 2040.

Claris Em@iler 2.0

The maximum date that can be processed by Em@iler is 2032. Em@iler interprets 00-03 as dates in the 1900s.

ClarisDraw 1.0

ClarisDraw is not susceptible to Year 2000 issues — there is no date function in this application.

USB and You

By Jerry Kindall, <kindall@manual.com> Submitted by Les Anderson

With the announcement of the iMac we started hearing a totally new abbreviation in the Macintosh world USB. Gone were our familiar ADB port and modem ports and printer port, not to mention the SCSI port. Why is Apple moving to USB? What was wrong with serial ports and what's good about USB ports'! Let's find out.

What Is USB?

USB stands for "Universal Serial Bus" and is a special kind of serial port that is growing in popularity in the Wintel world, even though Widows doesn't support it very well. Most]late model PCs have at least one USB port. and Windows 98 introduces theoretical p]plug-andplay support for devices attached to the USB port. (Bill Gates' widely reported COMDEX(crash occurred as he was connecting a USB scanner to a PC running Windows 98.) USB is intended to replace all the various types of low- to medium-speed data ports hanging off the back of a PC

(although most current PCs with USB also have at least some of the old-style ports). This includes not only the serial ports but also keyboard ports, mouse ports (which, on a PC, are basically another serial port), and parallel ports. Keep in mind that on a PC, the parallel port is used not just for printers but also for other devices such as Zip drives, tape drives, scanners, and even some modems. Given that USB is intended to replace the parallel port as well as lower speed serial ports, and to do it all at once, it's pretty speedy. USB devices can talk to the computer at two speeds: 1.5 Mbps or 12 Mbps (that's millions of bits per second, and remember, there are 8 bits per byte if you want to translate to bytes per second). In comparison, the ~ Mac's serial ports max out at 230.4 Kbps, and ADB at just over I Kbps. Devices like keyboards and mice will use the slower speed; devices like Zip drives, printers, and scanners will use the faster speed. Both speeds can he connected to a single USB bus. Ah, the bus. The term conjures images of the Apple Desktop Bus (ADB),

Apple's standard way of connecting input devices to the computer, with its easy daisy-chaining. However, USB doesn't support daisy-chaining in the same way. Each USB port can host one and only one peripheral. However, that peripheral can also be a device called a hub, which provides additional USB ports for more devices. Up to 127 devices can be connected to a single USB port using a collection of hubs. (Theoretically, a device could incorporate a "singleport hub" for daisy-chaining, but this isn't Likely in the price-conscious PC market.) Like ADB devices, USB devices can draw power directly from the bus, within limits. If you have many power-hungry USB devices, you'll want a powered hub to provide current for them. (The serious power hogs — things with moving paw and motors, like printers and scanners will have their own power supplies and won't rely on the USB for power.)

Hook 'em up

What kinds of devices will be available? Input devices, obviously:

keyboards, mice, graphics tablets, joysticks, and so on. Anything that typically hangs off a PC parallel port is also fair game, which means we'll probably see USB Zip drives and other relatively slow mass storage devices (in fact, Imation and Panasonic have already announced a USB version of their LS-120 Super)disk drive, which reads both 120 MB and 1.44 MB disks). Other USB candidates include tape drives, scanners, digital still cameras, modems, and printers. Newer Technology has also announced plans to create a USB-based floppy drive specifically for the iMac. Many cable modems and ADSL adapters operate within the bandwidth of USB, so we might see those kinds of devices as well. The 12 Mbps variant of USB is faster than standard 10 Mbps Ethernet. Although there will undoubtedly be USB Zip drives (or similar cartridge-type drives like the LS-120),don't expect decent performance from hard disks attached to the USB.

Though a USB Zip drive will probably be faster than the PC parallel port version, and more than adequate for the kind of exercise a consumer is likely to give such a peripheral, SCSI is still faster. Even the slowest version of SCSI has a raw throughput of 5 MB per second, more than 3 times faster than USB, and the newer Ultra/Wide/Wide SCSI III can reach 40 (and recently 80) MB per second. For hard disks and digital video cameras, you'll still want SCSI, or the ultra-high-speed serial port dubbed FireWire, which is yet another topic.

USB and the Mac

How do Mac users benefit from USB? The obvious answer is that we can tap into the competitive jungle that is the PC marketplace. Before long, you'll be able to buy \$15 keyboards just like your PC-using friends. (Of course, they'll be PC keyboard, but they'll work on your Mac. Reports have already come i~ about users successfully hooking up a Microsoft "Natural Touch Keyboard"

to an iMac!-Ed.)Each USB device identifies itself through a generic "type" I'm a keyboard," "I'm a mouse." "I'm a Reality Distortion Field generator"), and a USB-compatible Mac will have a USB Manager with built-in drivers that let it talk to many devices in at least a minimal way. You'll need Mac-specific drivers to take full advantage of many peripherals, but it's a lot cheaper for manufacturers to create an extra piece of software than to make both a parallel port and a SCSI version of a removable-media disk drive for different markets. PC Cards work in much the same way now - the standard PC Card modem drivers work with almost any PC Card modem, but more specialized PC Cards require custom drivers. A few manufacturers have already announced Mac support for their USB peripherals. If the iMac takes off as retailers expect it to, many more manufacturers should follow suit.

USB has faced an uphill battle in the Windows world because of drivers. One of the primary reasons for the success of Windows over the years is that Microsoft includes a vast collection of drivers for different hardware devices with Windows itself, reducing installation difficulty and conflicts. However, since USB came out after Windows 95, drivers have all been provided by the individual USB peripheral developers, resulting in chaos. Just-released Windows 98 includes better USB support, so there's hope that the field will settle down. Apple's strategy of including drivers for common types of USB devices may make USB far more coherent on the Mac. And the Mac has another USB advantage over Windows: the iMac has already been hailed by the USB Consortium as "100% USB compliant," an application that Windows has not received and isn't likely to. The iMac's keyboard, by the way, has a built-in two-port hub, so you can attach one additional device besides the mouse. The iMac itself has two independent USB ports (each with its own 12 Mbps bandwidth), which

means that the stock iMac supports two additional USB~peripherals (along with a mouse and keyboard), one connected directly to the computer and the second connected to the keyboard. If you need more USB ports, 4-port hubs run about \$100 right now. but some observers expect them to fall to the 80 range as USB catches on; this has already happened with Ethernet hubs. Along with Newer Technology's announced plans to create a USB-toserial converter, the rumor mill is hinting that at least one manufacturer will introduce a USB peripheral that will provide "old-style" Mac serial, ADB, and (really slow) SCSI ports, so users who move to an iMac from an older Mac can take at least their old printers and modems with them and hook up their old hard disks long enough to copy all their data over. An iMac with such an adapter and an ADB credit-card reader and bar code scanner would make a groovy-looking point-of-sale terminal(at least until there are Mac-compatible USB versions of these peripherals). Though it's never a good idea to put faith in rumors. this seems like an obvious product, if it can be produced at a reasonable price. Don't expect total software compatibility, though, as some software products unreasonably assume that no characteristics of serial ports ever change.

Take all you want

The place to find USB info is definitely the Web. There are dozens of sites devoted to USB issues as well as the iMac. For example, you can f~find out more about USB specs and technical issues from a site operated by a USB industry consortium at <www.usb.org/> and see what kinds of peripherals are available by visiting USB Stuff, a retailer of USB peripherals at <www.usbstuff.com>. In addition, there are the usual Mac web sites that all have specialized iMac and USB pages. MacInTouch has collected a large supply of information about USB contributed by readers:

<http://www.macintouch.com/usb.h
tml>, as has MacCentral <www.maccentral.com> and MacFixit
<www.macfixit.com>. And... let's not
forget Apple itself. Visit
<www.apple.com/imac to get the latest
on iMac and USB news.</pre>

This article is reprinted and updated with permission from MWJ, the Weekly Journal for Serious Macintosh Users. If you can't get enough insightful Macintosh news, sign up for a free, no obligation, two issue trial subscription to MWJ, or

download some other free sample articles. For more information, see the MWJ Web site at ~http://www.gcsf.com/>

Apple Launches New Desktop Lineup for 1999

Submitted by David M. Peck

New iMacs in Five Colors, Power Macintosh G3s, Apple Studio Displays and Mac OS X Server Debut at MacWorld

MACWORLD EXPO, SAN FRAN-CISCO — Jan. 5, 1999 — Apple Computer, Inc. today launched iMacs in five new colors, a new line of Power Macintosh G3s along with three new matching Apple Studio Displays, and Mac OS X Server software. In addition to Apples new products, a growing number of third party software titles and hardware add-ons debuted at the show.

Our new Power Macintosh G3 and new iMacs in five stunning colors give Apple its strongest and most innovative product lineup in years, said Steve Jobs, Apples interim CEO. And, Mac OS X Server software is very modern server software, opening up an entire new business for Apple.

Apples new line of Power Macintosh G3 systems are the Company's most powerful computers yet perfect for design professionals, educators or even home users looking for a machine that can handle the latest in 3D games. Replacing the original Power Macintosh G3, which was launched in November 1997 and accounted for more than \$3 billion in sales, the new line

includes the latest copper-based PowerPC processors running up to 400MHz, ATI RAGE 128 graphics. FireWire, USB and 10/100BASE-T Ethernet. Housed in a stunning translucent minitower enclosure with a revolutionary door that simplifies access and expansion, the new Power Macintosh G3 line starts at an aggressive estimated retail price of U.S. \$1,599. Complementing the new systems are three new Apple Studio Displays that deliver outstanding image quality and match the striking design of the new Power Macintosh G3 line.

For the consumer market, the company announced a faster line of new iMacs that come in five dazzling colors Blueberry, Lime, Tangerine, Strawberry and Grape. The new iMacs feature a faster 266 MHz PowerPC G3 processor, a 6GB hard drive and a new lower estimated retail price of U.S. \$1,199. iMac has become the best-selling computer in America by addressing real consumer needs not met by traditional PCs, with its simple ten-minute set up and Internet access, and its space and cable-saving design.

Apple also unveiled Mac OS X Server, the Company's new server operating system, which combines the proven strength of Unix with the simplicity of Macintosh. Mac OS X is built on the high-performance Mach micro kernel and BSD 4.4, and includes the Apache HTTP web server and WebObjects application server. Mac OS X Server is Apples first modern server operating system, and coupled with the new Power Macintosh G3 line, Mac OS X Server delivers affordable server solutions for Apples Internet publishing, web application development, print publishing and education customers.

Also announced at today was news that over 1,300 new third party software titles for the Macintosh have been introduced since iMac was first unveiled in May 1998, including an unprecedented number of new games titles arriving on the platform. At the same time, FireWire and USB companies have introduced a significant number of hardware add-ons for the Power Macintosh G3 and iMac.

Apple Computer, Inc. ignited the personal computer revolution in the 1970s with the Apple II, and reinvented the personal computer in the 1980s with the Macintosh. Apple is now recommitted to its original mission to bring the best personal computing products and support to students, educators, designers, scientists, engineers, businesspersons and consumers in over 140 countries around the world.

Board of Director Nominations Sought

by John C. Hunkins, Sr.

One item of business we must conduct at our annual meeting is the nomination of members for eight of the nine officers annually elected to the board of directors. (The ninth officer, the Past President is 'grandfathered' in.) The election will be conducted by ballot printed in the April newsletter.

You are encouraged to consider nomination for one of these offices.

To assist you in that consideration, the Leadership Responsibilities section (Section E) of the bylaws follows. In addition, please encourage others to seek election to these offices.

E. LEADERSHIP RESPONSIBILITIES

1. General Duties.

The duties of the elected officers are in general to:

Promote the purpose and membership of mini'app'les.

Administer the bylaws of the min. app'les.

Assure the financial well-being of the mini'app'les.

Attend and report at each board meeting.

Carry out decisions of the board in a timely manner.

Appoint staff and committees as necessary, subject to board approval.

Communicate to the board the needs of appointed staff and membership in general.

2. Duties of the President.

The President will:

Provide leadership and direction to the general membership and to the board of directors.

Prepare an agenda for each board meeting.

Chair mini'app'les board and general membership meetings at which business is conducted.

Assign duties to board and staff members.

Establish goals to be reached during the term in office.

3. Duties of the Vice President.

The Vice President will:
Assist the President with the duties of that office and in the absence of the president, assume the duties of that office.

Organize the program, facilities

and equipment for general membership meetings including meetings for nominations or voting by membership.

Coordinate participation in events, such as trade shows and seminars.

4. Duties of the Treasurer.

The Treasurer will:

Maintain the mini'app'les financial records and records of mini'app'les assets.

Prepare a written financial report to include income, disbursements, current account balances and assets, at each board meeting. This report will be included in the minutes.

Prepare an annual budget.

Be cognizant of and act upon requirements of the IRS and Minnesota State Department of Revenue in a timely and efficient manner.

Administer the collection of all monies due the mini'app'les.

Establish and maintain bank accounts in the name of the mini'app'les.

Deposit all monies in the mini'app'les bank account(s) in a timely and efficient manner.

Pay all bills and demands as authorized by the board.

5. Duties of the Secretary

The Secretary will:

Record in a permanent form the minutes of all board and general membership meetings at which business is conducted.

Record the results of elections.

Archive and maintain all mini'app'les records other than those kept by the Treasurer.

Keep a mini'app'les calendar. Assist the President and Vice President in correspondence as required.

6. Duties of the Past President.

The Past President will:

Provide continuity in the leadership of the mini'app'les.

Assist the President with the duties of that office.

Provide historical references for decision making process.

7. Duties of the Publications Director.

The Publications Director will:

Oversee publication of the newsletter.

Appoint with consent of the board:

Newsletter Editor and assistants Advertising Coordinator

8. Duties of the Marketing Director.

The Marketing Director will: Oversee the maintenance and processing of membership records and materials

Promote membership

9. Duties of the Interest Group Director.

The Interest Group Director will: Oversee all matters related to the development and maintenance of Special Interest and Community Interest groups

Encourage and assist in the formation of new interest groups

Act as spokesperson to the board for group representatives.

Hands on: Grammarian and TechTool Pro 2.1.1

by Dennis Sellers, dsellers@maccentral.com January 12, 1999, 8:00 am ET reprinted from MacCentral.com with permission

Two holiday Christmas goodies I just recently got around to test-driving are worth your consideration.

You either love grammar checkers or you hate 'em. I love 'em though I've learned to take their recommendations with a grain of salt. And if you like grammar checkers, you're in luck with Word and WordPerfect as they come with their own. But other spiffy word processing apps like

Nisus Writer and AppleWorks don't have a grammar checker included.

Enter Grammarian from Casady & Greene. This handy, dandy utility checks grammar interactively while you type or batch checks entire documents. It converts legal terms to everyday English, catches misspelled

compound words, gives the "readability level" of your work, and gives the number of words per sentence, average sentence length and syllables per word. It also does more, but you get the idea.

Grammarian has a suggested retail price of US \$59.95. Not a high price to pay for more readable documents.

The second program wasn't actually a Christmas present, although I bought it with Christmas money at the recommendation of several readers. After my "hands on" review of Norton Utilities for the Mac 4.0, a dozen or so emails told me to check out TechTool Pro 2.1.1. I did, and all

I can say is "thanks" to those who suggested it. TTP 2 was able to handle a repair job on my Mac that NUM couldn't.

To put it simply: TechTool Pro 2 from Micromat performs more tests on your Mac system than any other diagnostic utility of which I'm aware. It checks and repairs all aspects of your Mac from your ADB circuitry to your Zip drive through an entire battery of tests. Micromat says TechTool can completely analyze all the various hardware in and hooked to your computer. I believe it.

The only downside to TTP 2 is its sometimes confusing interface.

Actually, it offers two interfaces, neither of seem user friendly enough. New users will find NUM's interface much easier to understand.

Despite this one nitpicking flaw, you should definitely check out TechTool Pro, which you can pick up for under US \$100. If you're Mac is having trouble under the hood (or anywhere else) this program can probably fix it.

© Copyright 1999 MacCentral, Inc. All rights reserved.

Final comments on Mac maintenance utilities

by Dennis Sellers dsellers@maccentral.com January 14, 1999, 9:30 am ET reprinted from MacCentral with permission

I'm drowning in comments concerning Tuesday's mini hands-on review of Tech Tool Pro 2. Some readers like TTP 2. Others like Norton Utilities for the Mac (NUM) 4.0. And the new Disk Warrior from Alsoft is mentioned in an unexpectedly high number of emails. Be that as it may, here are a few final comments on the Mac maintenance utilities

Doc Christian of Net Investigators Association and MacMedics has been a Mac diagnostic tech for nine years. Being familiar with, and having purchased one of the first copies of TechTool when it was released, he offers the following:

"I use both TTP 2 and Norton 4.0 on my PPC 6400/200 daily. Having put both utilities through the grinder for several months now, here is what I've discovered:

"In each and every case, Norton will always find something TTP missed. (Prior to Norton's latest release, just the opposite was true.) To date — at least on my Mac and other Mac tech friends' machines in the Orlando, Florida area — we have

each found greater benefits in using Norton than TTP 2. Try this:

"Run TTP 2 and then run Norton. A full run, now, so as to give both applications a fair chance. I think you will discover what all of us here in Orlando have: that no matter how many times you run TTP 2 in any mode, you can then run Norton and find at least 'something' that TTP 2 missed. In some cases, even major 'errors' missed by TTP 2. (Though, admittedly, not often.) Overall, I have to give the edge to Norton, especially as I use my Mac on average of 16 to 18 hours a day, seven days a week. (Running 8.5.1, HFS+, 136MB RAM.) I agree that MicroMat offers 'features' unavailable in Norton, but by the time you find yourself testing your RAM, modem and other 'options' offered by TTP 2, you will have already discovered that your Mac is 'broke.' "

Stephen Wylie agrees that Tool Pro 2.1.1 is a good application and says he prefers dealing with the people at Micromat, who are friendly and helpful (free of charge) to dealing with Symantec. But he says TTP211 doesn't do everything NUM does.

"You could say we are talking the proverbial 'apples and oranges' since I am only using NUM 3.5.2," Wylie

says. "But then I am using OS 8.2 with HFS (no '+'). There have been things TTP could not fix even after five passes when it finally gives up. I could turn around and fix the same thing with Norton. As far as optimization is concerned, it is nice not to have to restart with the 'c' key down to optimize the hard drive, BUT TTP will stop optimizing when it decides there is not enough free space to do the job. Every time this has happened I have been able to get it done with Speed Disk. I am sure I would have the same results if I upgraded NUM to 4, my hard drive to HFS+, and my OS to 8.5."

Brian Kortmeyer point outs that Techtool Pro 2.1.1r2 (its official title as of yesterday) also includes two features that "skyrocket it past any status the NUM holds on the Mac platform."

"One, the latest release included full disk optimizing. That, as we all know, should be a Godsend over NUM," Kortmeyer says. "Two, it also includes shutdown resource saving or disk image saving for later recovery services. And have you tried the tech support at Techtool's Web site? You can expect an email reply in less than an hour during the day."

© Copyright 1999 MacCentral, Inc. All rights reserved.

Discount Software & Macs Recycled

by John C. Hunkins, Sr. Publications Director

For the past few months, readers have seen an advertisement on this page for Fred Frankena's Discount Software store in the Village North Shopping Center in Brooklyn Park. Fred has closed that store. I had hoped to have the details before I 'put this issue to bed'. I called the

phone number listed in the advertisement and was referred to a new phone number: 612-425-9403. I called that number and answering machine answered with a message from Fred and Discount Software & Macs Recycled. I left a message for Fred to call me in order that I could write a better article; I assume that Fred is away this weekend at a show

and thus could not respond. In summary it appears Fred continues to be in business; if you are in need of RAM, legacy Mac equipment, or software, please give Fred a call at 612-425-9403. Disclaimer: This is not a club endorsement for Fred; just a courtesy follow-up to a paid advertisement that ran for three months in the newsletter.



MacWorld became an auto show of sorts. Left is Mindvison's (MindExpander) version of the iBeetle, Right is Radius' version of the iBeetle. Photo on the left is courtesy of MacCentral.com. Photo on the right is courtesy of Brian Bantz.



mini'app'les Gaming Group (mGG) Wants You!

By David M. Peck

Intrepid mini'app'les warriors are meeting on a regular basis for fun and socializing. Our interest is networkable Mac games and are always on the lookout for others who would like to participate. Finishing a game solo might make you feel like King of the Hill. But there is nothing as challenging or fun as human competition. Plus, Winter around here seems to be a perfect time for gaming!:-)

The mGG meets about once a

month. If your interested in networkable Mac gaming, feel free to drop a note on the mini'app'les BBS or give me a call at (651)423-5711. We'd look forward to seeing you!

Ongoing Deals for mini'app'les Members

The following businesses have agreed to provide ongoing discounts to members of mini'app'les. Please identify yourself as a member of mini'app'les to qualify for these discounts. For questions related to these discount offers, please contact Tom Gates, 612-789-1713 evenings and weekends, or e-mail on our BBS.

Power Protection Products

Surge Protection strips, Battery backups, line conditioners, etc. Contact Keith Kalenda at Business Security Products,612-789-1190. 1/3 off APC SurgeArrest line of products 25% off APC BackUPS, SmartUPS and related products.

Peachpit Press

Peachpit Press offers mini'app'les members a 40 percent discount on

their books. Our contact person for Peachpit is Keary Olson, he can be contacted at SIG meetings, on our BBS or his home phone, 612-724-0031. Peachpit books may also be ordered on our BBS; go to 'Conferences', 'Special Offers', 'Peachpit Books'. From time to time, Keary will have Peachpit catalogs at SIG meetings. You may also check Peachpit's web page at http://www.peachpit.com/ for current and soon to be released books.

In order for our members to receive the 40 percent discount, Peachpit requires a minimum number of books be ordered. Therefore, please allow sufficient time. Minnesota sales tax and a \$ 0.50 shipping charge will be applied to each book ordered.

Macmillan Computer Publishing

MacMillan Computer Publishing offers mini'app'les member a 30 percent discount on their family of books (Hayden, Adobe Press, Que, Sams, Brady, NRP, and Alpha). MacMillan books may be ordered by calling an 800 number. Use the mini'app'les account number, 10782880, when ordering. Minnesota sales tax and a s/h charge will be added.

MacMillan's web page is at http://mcp.com/. MacMillan Publishing produces frequent listings of new titles that have been added to their catalog. Mini'app'les will attempt to have these available on the BBS in addition to the catalogs.

Benefits of your mini'app'les membership include:

A one year subscription to our monthly Newsletter

A free account on the mini'app'les BBS (45 minutes/day)

Communicate with other mini'app'les members plus get up to date information on mini'app'les events and meetings. Get assistance from other members. Download freeware and shareware.

Eligibility for frequent drawings of free equipment, software, and books.

Just a few of the many items given away free in the last year included: Connectix QuickCam, Microsoft Encarta, Books from Peachpit Press and MacMillan, RamDoubler, SpeedDoubler, Lind PowerBook battery Conditioners and Rechargers, Microsoft Art Gallery, and Apple System 7.5 software.

Discounts on book orders

40% off Peachpit Press, 30% off MacMillan family of book companies (Hayden, Adobe Press, Que, Sams, Brady, NRP, and Alpha)

Periodic special User Group discount offers on equipment and software.

In the past year, Apple, Hayes, Brøderbund, and APC Power Protection (Business Security Products), among others, have offered mini'app'les members significant discounts.

Plus, you're supporting all of mini'app'les' special interest group (SIG) meetings that you can attend each month.

It's easy to recoup your cost of membership with the above benefits.

And a one year membership still costs only \$25.



PAID St. Paul, MN Permit 2537

Non-Profit Org.

U.S. Postage



EXPIRES: 99-12 ID# 160

DAN B BUCHLER 2601 WOODS TRL BURNSVILLE MN 55337