

# The Mac 512 User Group Newsletter



Inspired by the Original Macintosh, for all Macintosh lovers.

## A New Year - www.mac512.com

Y2K brought most people a sign of change. For The Mac 512 User Group and The Mac 512 web site this meant a new Internet Address.

Presenting www.mac512.com!



www.mac512.com will be the final home for both the user group and the web site.

<b>In this issue-</b>	
A New Year - www.mac512.com	- Page 1
Rebuilding the Desktop-Macintosh	- Page 2
Adding an internal fan to Macintosh	- Page 7
Working with a floppy drive only Macintosh	- Page 8

Finding the new site is easier than the free site on my personal Internet access account. Less typing too!

I plan on bringing online new disk images which include:

- ◆ System Software version 3.1
- ◆ System Software version 6.0.6
- ◆ Internet Toolkit for System Software version 6.x
- ◆ More Guided Tours disks for the Classic Macs.

I hope you like the change.  
G.

# Rebuilding the Desktop - Macintosh

This word once meant “Freedom, Individualism, and Power”. Now it means “Rebirth, Evolution, and Power”. As personal computers were the rage in the home, business was still looking at them as a possibility. Most businesses did not see why people would want any kind of computer in the home, much less a “personal” computer at work. The norm was the mainframe or minicomputer. Share the power among several people, instead of just one. Macintosh was not the first personal computer, just the first personal computer that was easy to use at a price people possibly could afford. Apple’s Lisa was the first glimpse of the future that came to Macintosh with System 7.x, Lisa had the memory and disk space to do it in 1983 for a \$10,000 price.

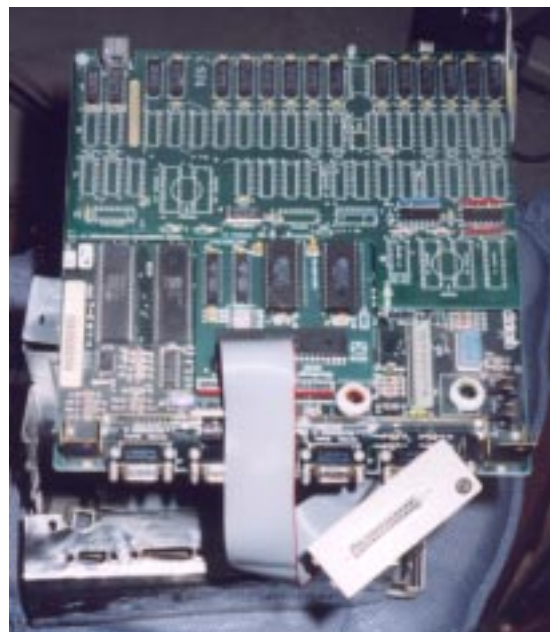
Other personal computers used a command line with each application’s unique “look & feel” made learning how to use the computer difficult. Macintosh’s one-way approach made learning a computer simple and quick.

Macintosh was brought down to the world of personal computer reality - single tasking computers sharing information easily. In comparison Apple’s Lisa is a multitasking computer which also shares information easily. In some cases easier, as both of your applications could be up at the same time. Nowadays this feature is in all of the current computers.


A device called a mouse was no different than a track ball in operation, the ball was facing down instead of up. Track balls were the rage in gaming for certain games. What was hard was people getting used to using the mouse instead of the keyboard. Once that obstacle was overcome, you could maneuver through any application like a pro. A mouse is also a main staple of any current personal computer, or professional workstation system.

The memory chips is what hindered the release of what Macintosh was going to be, a 512KB of memory powerhouse! Timing made the decision as chips were hard to get from Japanese manufacturers, plus higher RAM prices was in effect. Turning Macintosh into a journalist’s dream, a story of problems.

*Continued on Page 3*




MacRescue - This add-on memory and SCSI board is sandwiched between the CPU and logic board.




**Disk Copy**

Disk Copy - The magic utility which let the Macintosh 128K copy disks with as few as 4 disk swaps.



**Font Mover**



**Fonts**

Font Mover - The first utility of its kind on Macintosh. Fonts was the only thing originally you could take out of or add to your System file. The unused fonts were stored in a font "container".

*Continued from Page 2*

The problems included the number of disk swaps needed to run an application or copy a disk, the amount of pages open at one time, how large of a drawing you could create, and overall speed. One cool effect you can do if you have a Macintosh 128K, is to copy a 400K disk while using one disk drive. The Copy Disk application used a part of memory usually reserved for the screen, thus creating cool screen effects. Finder 1.1g included the ability to copy a disk with only 4 disk swaps! This was a big enhancement as many people backed up their floppy disks in case they wore one out.



Macintosh - The most elegant personal computer every made - my opinion.

November 1984 hit, Macintosh grew up and most of the people did not experience those problems much. Hooray! The Fat Mac was out! The cool effect of Copy Disk went away as well. With a Fat Mac (Macintosh 512K), only one disk swap was needed using 400K disks. Now the new Finder would let you boot into an application directly saving almost 20 seconds on startup. Most people had the dilemma of upgrading to the higher memory. This expansion was expensive no matter which way you did it. Apple provided a logic board swap while third party manufacturers had a daughter card which fit on the CPU chip (either "snapped on" or was sandwiched between the CPU and original logic board.).

A few companies would ship you a new logic board that you swapped and sent your 128K logic board back to them. They would then unsolder the memory chips which made up 128K and soldered on memory chips which would make up 512K. Remember the logic board was designed for 512K all along. No matter which way you upgraded the memory in your Macintosh, the point is you needed it. The extra memory could be used to create larger documents, run multiple applications using The Switcher Construction Set, or speed up the Macintosh by adding on a utility which gave Macintosh a disk cache.

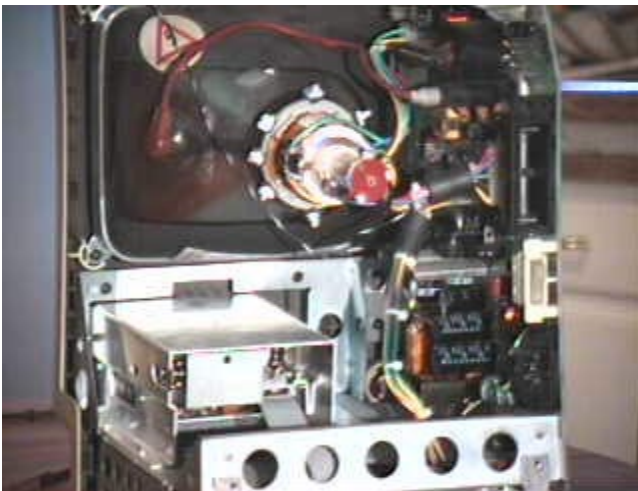
*Continued on Page 4*

## Rebuilding the Desktop- Macintosh

*Continued from Page 3*

### Let go inside of Macintosh

To open up Macintosh you need a screwdriver (longer Torx-15) to accomplish this simple task. On the back of the Mac, remove 4 screws along the top and bottom. Then remove 1 screw inside the battery cover. The back will slide off with a bit of force. Spread the seam running down the side if need be. Now is the dangerous part, anytime you deal with a monitor they keep a charge for several days if not several weeks. Be careful not to bump the suction cup off of the monitor or remove the back of the stem of the monitor. Unless you have to fix a problem, or to swap out a monitor. Otherwise you should be ok.



The logic board would be here.

When you look at the insides, you see the analog board (power supply) along the right side, the logic board (motherboard) along the bottom, the floppy drive on top of the logic board and the in the upper middle area the monitor. Wires connect everything to either the logic board or the analog board. Failure rate

The monitor, analog board and "cage" are connected to each other.

In the picture to the left, they have been separated from the case.



was very high with the analog board as no fan was in the Macintosh.

The "cage" which supports the floppy drive and the motherboard is secured to the front part of the case by 9 Torx-15 screws. If you ever need to swap the analog board and the monitor from one Macintosh to another, the easiest way is to switch the front part of the case, rather than separating the analog board from the monitor. I have learned this from experience.

### Software is the key

The designers of Macintosh used software to be their tool for expandability, not hardware slots. Most of the world used hardware slots (including the Apple Lisa and the Apple II series), the problem with slots was writing drivers which would cooperate with other manufacturer's cards & drivers. Macintosh came with everything you would ever need. If you wanted to network to a different computer you have to

*Continued from Page 4*



The front part of the case and the "cage".

purchase a card, with Macintosh the printer port can be used. If you wanted to hook up a hard disk drive this required you to add a card, with Macintosh you plugged one in the modem or floppy ports. The ease and safety of adding on components made this approach work.

Why open up your computer to install yet another feature and risk damaging something else by accident? Plug it in and go! This was the basic concept behind the slotless Macintosh. At the time hard disks were owned by those who could afford one, the majority of personal computer users still used the floppy disk drive.

## Connections

In 1984 only companies had networks, homes did not. The LocalTalk port was fast enough (230 kilobits) for a network. The AppleTalk Connector (as it was called) was only \$50.00. The Macintosh Office came out in 1985, and

delays with the AppleShare file server meant many businesses would not take Macintosh seriously for years. The ones who did found a network which was simple to connect to, simple to load, and simple to use. The LaserWriter was a boon for the Macintosh Office, this meant a team or department could share one printer which printed the quality everyone wanted. Good bye to dot matrix or daisy wheel printers. Luckily the LaserWriter was available in 1985. AppleShare did not appear until 1987.



The printer which sparked the Desktop Publishing Revolution!

Networking was the rage with personal computers everywhere, it still is. The Macintosh with 128K of memory could only use the network to print to the LaserWriter, not use any type of file sharing. However the Macintosh 512K and higher can access any AppleShare compliant server. Plus it can also print to any network printer. This is the computer for the network savvy user!

*Continued on Page 6*

## Rebuilding the Desktop- Macintosh

*Continued from Page 5*

### AppleLine

Another type of connection is connecting Macintosh to a mainframe environment. By using AppleLine, Macintosh can emulate a 3270 dumb terminal by using MacTerminal. It worked by emulating an IBM 3278 Model 2 terminal. Not only did MacTerminal let you access the world of IBM mainframes, you could also access local BBS (Bulletin Board Systems) and CompuServe.

One obvious answer was the space savings you have when using AppleLine, the box fit snugly under Macintosh. It let you copy down information to be used by another application or just stay online to use the applications on the IBM mainframe. One benefit was having drop down menus emulate many special keys normally found on the terminal. AppleLine could be used remotely or where the mainframe was located. Just place two modems in between AppleLine and Macintosh and you could sign into your mainframe from home.



The box as known as AppleLine.

AppleLine worked as you connected the coaxial cable and either a modem or Macintosh to it. You can place an IBM 3274 Communications Controller remotely and then have a slew of Macintoshes connected to the controller. Your entire office is now remote! This one piece made Macintosh available in a world that did not want it. Many IBM mainframe shops still preferred the IBM PC over Macintosh as it had three letters the Mac did not - IBM.

### Storage

Disk space is the key for a GUI-based operating system. Macintosh had its lumps with a single 400K drive.

The first hard drive for Macintosh I saw was Tecmar's MacDrive. This external hard disk provided 5MB - 10MB of storage via the serial port. One of the most creative ideas was General Computer's HyperDrive. I was not blessed enough to actually own one of these. This was the first Mac internal hard drive.



MacDrive in full form

Apple finally released their own 20MB hard drive which hooks to the floppy port, called HD20. This original idea let you use all of the ports on the back of your Macintosh and add a hard drive. Remember Apple did not want you to get inside of your Mac, this followed that rule. This drive is pretty fast though.

For more information on Apple's HD20:  
<http://www.mac512.com/hd20.htm>



Apple's first Macintosh hard drive.

No matter which way you went, the extra storage was a blessing. It meant a faster Macintosh.

# Adding an Internal Fan to Macintosh

Macintosh has no built-in fan. It is quiet and the outside of the case feels hot. This is the #1 reason why the older Macintoshes fail. This guide will help you get your Mac cooler. This will work with the original Macintosh through the Macintosh Plus.

- ◆ Open Macintosh by removing the five screws to open the back case.
- ◆ Face the back of Macintosh so you can see the analog board (power supply).
- ◆ My opinion is - use an AC Boxer fan, these cost under \$20 (U.S.) Radio Shack #273-243 is a larger fan and should be used to blow air inside the Mac.



- ◆ The boxer fan has two bare wires, attach the wire from each plastic clip to the boxer fan wires. Test Jumpers are under \$5.00 (U.S.) Radio Shack #278-017



- ◆ Clip one test jumper on the analog board at spot CR23. The other wire clips onto spot CR24.



## Mounting the fan -

You can place the fan inside blowing directly on the analog board. Or if the wires are long enough you can mount it so it will blow the hot air out the top of Macintosh.

Use double-sided foam tape to secure the fan in place. Remember if you place the fan to blow outward, your case will be hooked together. Make sure you have at least a foot or two of wire.

< - Position the fan to blow out from here.

# Working with a floppy drive only Macintosh

No matter when you used your first Macintosh, one time or another you probably have used a floppy drive system. If you have not, I strongly suggest trying one out. You will appreciate hard drives much more.

## One floppy drive system

As soon as you start working with one of these Macintosh systems, you will see the famous, never-ending, disk swap technique. We will show you how to maximize your floppy disks to reduce the number of disk swaps.

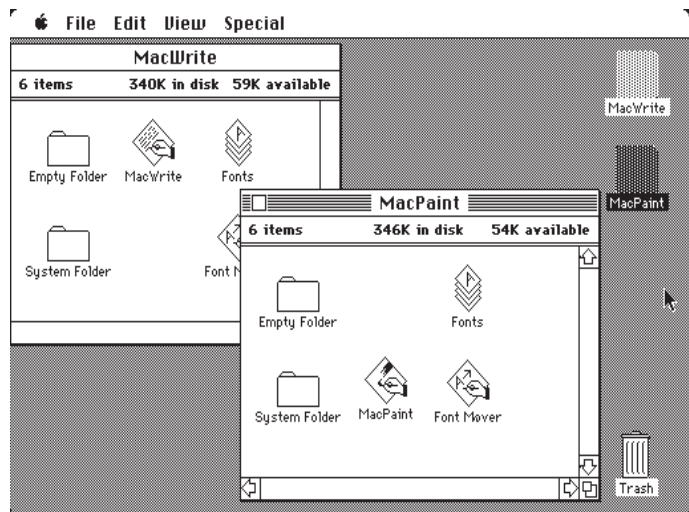
- ◆ Organize your applications - pick out the ones you want to use. For this example we will use MacWrite and MacPaint.
- ◆ Get a bunch of blank, formatted floppy disks.

### Lets create a workdisk for each application

- ◆ Copy your System Folder to the workdisk.  
*Look in your System Folder to see what you need.*
  - √ If you are printing you need the ImageWriter or LaserWriter drivers.
  - √ NotePad File and Scrapbook File are used by the desk accessories NotePad and Scrapbook. If you are not going to use these, delete them.
  - √ The Clipboard File will recreate itself once you copy something into the clipboard. It is OK to delete this too.
- ◆ Use Font Mover or Font/DA Mover to move any fonts you don't want to use. Or add any fancy fonts you want.

- ◆ Copy your application and any documents to the workdisk.
- ◆ Label the workdisk to reflect it's meaning - MacWrite documents, MacPaint gallery, etc.

*Use the same System Folder on each workdisk.*



Two workdisks - MacWrite & MacPaint

### Using the Workdisks

- ◆ Start your Macintosh with the Application's workdisk. We will use MacWrite. As we are creating a birthday card, we need a graphic to spice it up.
- ◆ MacWrite is loaded and the birthday card's text is written.
- ◆ We save our document and quit MacWrite.
- ◆ Eject the MacWrite workdisk, pop in our MacPaint workdisk.
- ◆ Double click on MacPaint. We have a System Folder on our MacPaint workdisk, it will use that System Folder. (a few disk swaps will occur)
- ◆ Create our drawing in MacPaint, copy the drawing to the clipboard, save our drawing and quit MacPaint.
- ◆ Eject the MacPaint workdisk
- ◆ Insert the MacWrite workdisk
- ◆ Double click on the MacWrite birthday card document. (Finder will move information from the MacPaint workdisk clipboard to the MacWrite workdisk clipboard. This will take a few disk swaps.)
- ◆ When the document is opened in MacWrite, paste the graphic in and you are all done.

*Note:* By using a 800K disk drive you can create larger documents on each workdisk .

## Two floppy drive system

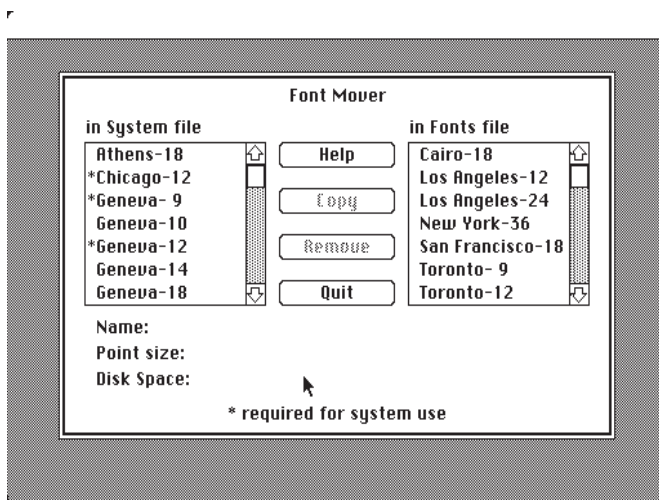
This gives you the capability to have multiple applications on one disk instead of creating a workdisk for each. My approach is to create a universal boot/application disk, and many document disks.

## Working with a floppy drive only Macintosh

*Continued from Page 8*

### Lets create the Application disk

- ◆ Copy your System Folder to the workdisk.  
*Look in your System Folder to see what you need.*
  - √ If you are printing you need the ImageWriter or LaserWriter drivers.
  - √ NotePad File and Scrapbook File are used by the desk accessories NotePad and Scrapbook. If you are not going to use these, delete them.
  - √ The Clipboard File will recreate itself once you copy something into the clipboard. It is OK to delete this too.
- ◆ Use Font Mover or Font/DA Mover to move any fonts you don't want to use. Or add any fancy fonts you want.
- ◆ Copy your applications to the workdisk.  
keep in mind a few applications like extra space for temporary files.
- ◆ Label the workdisk to reflect it's meaning - MacWrite and MacPaint, MacWrite and MacDraw, etc.



Font Mover in action!

### Using the Workdisks

- ◆ Start your Macintosh with the Application's workdisk. We will use MacWrite and MacDraw.
- ◆ Insert the document disk.
- ◆ We load MacWrite to create the summary page.
- ◆ We save our document to the document disk and quit MacWrite.

- ◆ Now we launch MacDraw.
- ◆ Create our floor plan drawing in MacDraw, copy the drawing to the clipboard.
- ◆ Save our drawing to the document disk and quit MacDraw.
- ◆ Double click on the MacWrite summary document.
- ◆ When the document is opened in MacWrite, paste the graphic in and you are all done.

If you were using The Switcher Construction Set you could perform this without quitting and restarting any applications. Switcher lets you use two or more applications at one time.

### **Backups**

Using a two disk system lets you backup your disks easily and quickly. As one drive is reading the other is writing. This can be done with a one-disk system with more disk swaps.

I hope this gives you a few ideas on organizing your floppy only Macintosh. I still use mine!

## **The Mac 512 User Group Newsletter**

The Mac 512 User Group Newsletter is written and produced by G. Younk. Its intent is to share ideas and some history to people interested in older Macintoshes.

Any reproduction of this newsletter must first get permission from G.Younk.

Published roughly bi-monthly.

We encourage comments . Thank you!

G.Younk - Editor-  
(E-mail: [gyounk@mac512.com](mailto:gyounk@mac512.com))

The Mac 512 User Group Web Site:  
<http://www.mac512.com>