

The PCI Issue

Macintosh Users East Beyond The Mouse Digi Comp1 PCI 7300/180 PCI 7300/300 PCI 9600 Ultimate Rez PCI NewerTech PCI



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From the Editor

Well,...summertime and the living is easy.

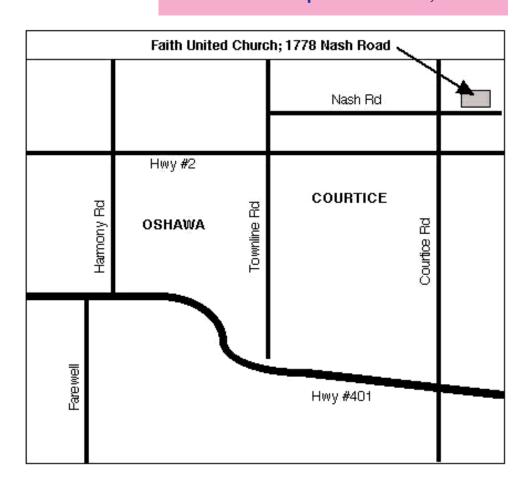
Small Print

What you are looking at is the latest edition of the Double Click monthly newsletter from the Macintosh Users East, (MaUsE), a motley collection of old and new Mac users who reside in Southern Ontario with a motley collection of old and new Macintosh computers. What more do you need to know? Oh, yes. This Newsletter is created by Michael Shaw, Double Click Editor, on an antique Macintosh clone, a 1997 Daystar Genesis MP 800+ running OSX v10.2.6.

Submissions from MausE Club members, 'though usually rarer than living, breathing mastodons, are always welcome. Send them to: michael_shaw@sympatico.ca. I have never refused a submission yet. There's always room for another piece on ANY Mac-related topic and I'll make room if there isn't. I would like your submissions. But I won't beg.

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The next meeting will be held at Faith United Church on Nash Road in Courtice Ontario, at 7:30 on September 22nd, 2004



Beyond The Mouse

By John Kettle

Many Mac people try to manage their word-processing by exclusively using the mouse to open the File, Edit, Document, Font, Style, and Window menus. It's almost like a religion. I'm guessing here, but it may be because of suffering the tyranny of long, tedious, easy-to-foul-up IBM PC instructions you had to type to move a word in a paragraph or to work a spreadsheet, and then the feeling of liberation that came when you were presented with the miracle of the mouse. At any rate, several of my friends avoid using the keyboard under almost any circumstances, even though there are quite a lot of handy and useful things you can only do from the keyboard, as well as a number of things that (dare I say it?) are simpler to do from the keyboard.

For example, to insert a page break in a manuscript, you point the cursor where you want the page break, then point at "Document," then pull down the menu until you get to "Insert page break," and then let go.

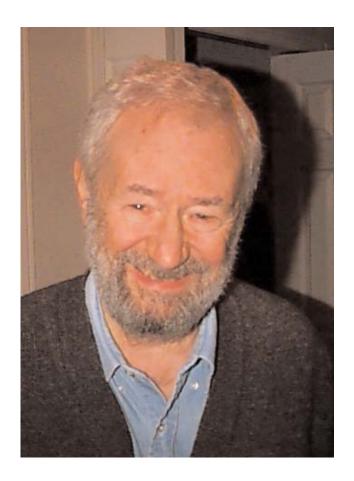
Or, you point the cursor where you want the page break, then hold down "control" with one finger, hold down "shift" with another, and type the letter c.

Which is easier?

In idle moments I've been exploring what chores you can get done using the four keys "control," "option," "command," and "shift." Here are some of the findings, not all of which are in official manuals. (And please note that some of this may not work with more up-to-date word processing software than I use.)

"Control" characters

Most times, "control" and any key produces no character and no movement of the cursor. "Control" plus a numeral simply produces the numeral. In the case of seven punctuation keys, "control" plus the punctuation key produces the punctuation: control ` = ; ', . / produces ` = ; ', . /



A few "control plus key" combinations produce cursor movements or deletions. Most of these combinations are the same if you add the shift key, in other words if you use "control plus shift plus key," with two exceptions, which produce something quite different. Here are the combinations that do something useful:

control i = tab

control] = move cursor one character forward

control \ = move cursor one character backward

control a = move cursor to top of file

control d = move cursor to bottom of file

control k = move cursor to top of page (or page up)

control I = move cursor to bottom of page (or page down

control m = carriage return

control c = carriage return

control shift c = insert page break

control h = delete previous character

control shift h = delete following character

"Option" characters

To many Mac users the "option" key on the Macintosh keyboard seems to be the blackest hole. In fact it produces a string of characters you can use in all sorts of ways, in ordinary text, mathematics, business correspondence, more subtle punctuation (specially quote marks), and so on. You can see the whole "option" keyboard in "Key Caps" in the Apple Menu as shown on the right:

Since most of these "option" characters are unfamiliar I'll point out some of the more useful ones.

The combinations that produce accents need a different action, or rather two actions, not just

one. In the first example shown below, for instance, you hold down option with one finger and the letter e with another, let go, then type e alone.

Accents used in French, Spanish, German, etc., and occasionally English words: option plus e, then e = é

option plus e, then e = e

option plus e, then a = á (works with all vowels)

option plus `, then $a = \grave{a}$ (works with all vowels)

option plus i, then $i = \hat{i}$

option plus i, then $a = \hat{a}$ (works with all vowels)

option plus u, then u = ü

option plus u, then o = ö (works with all vowels)

option plus n, then $n = \tilde{n}$

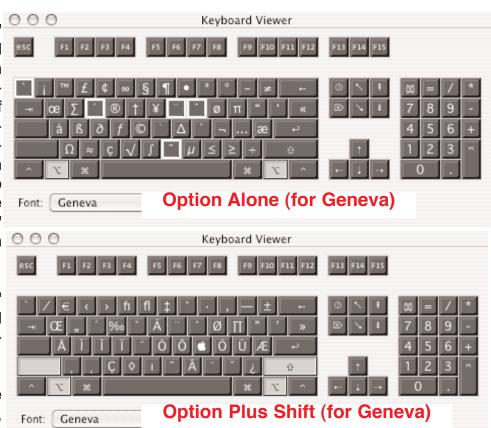
option plus n, then $a = \tilde{a}$ (also works with \tilde{o})

option plus c = c

A couple of these combinations work with capital letters:

option plus e, then shift plus $e = \acute{E}$ option plus shift plus $c = \ifmmode{C}\ifmmo$

For other accented capital letters, see the second, third, and fourth lines of the option-shift keyboard.



With the rest of the option characters, you hold down option while you type a character on the keyboard, or you hold down option plus shift while you type.

Punctuation

Six punctuation signs and the ampersand are on the plain keyboard:

, . ; : ' " &

Here are some more.

? and ! you're familiar with. In Spanish you open a questioning sentence with an upside-down question mark: "¿What do you mean?"

option plus shift plus / = ¿

And you write an exclamatory sentence like this: "iHelp!"

option plus 1 = i

Quotation marks (' and " are on the plain-key-board)

Several European countries use chevron-like quotes:

option plus \ = «

option plus shift plus \ = »

Type faces with serifs — for example, Times — would be expected to use seriffy quotation marks, but on the computer keyboard they don't. You can, however:

option plus] = '

option plus shift plus] = '

option plus [= "

option plus shift plus [= "

The ellipsis, the three dots that show something has been left out of the text:

option plus ";" = ...

Two paragraph signs

option plus $6 = \S$

option plus $7 = \P$

A large dot, good as a bullet in a list (though it comes out smaller in some type sizes):

option plus 8 = •

Among the punctuation characters are the hyphen, the en dash, and the em dash, the last two so called because they are the width of the characters "n" and "m" (shown here in 18 point):

: n m

It's obviously useful to distinguish between a hyphen and a dash. A hyphen joins two words, such as "a high-church choir", which would have a different meaning if not joined. A dash separates off a phrase inserted in a sentence: "Smith was driving his car — a beat-up Toyota — as fast as he could." Some careful editors give different functions to the en dash and the em dash. I've never had anything I wrote edited that carefully and I'm still not clear when you'd use which. But if you had to, there they are.

hyphen is on the keyboard en dash: option plus "-" = -

em dash: option plus shift plus "-" = -

Currency

The dollar sign, \$, is on the keyboard.

option plus $4 = \emptyset$

option plus 3 = £ (pound sign)

option plus y = Y (yen)

On newer keyboards, option plus shift plus 2 produces the Euro sign.

Business marks

option plus 2 = ™

option plus $r = \mathbb{R}$

option plus g = ©

Last, some joined-up characters used in old-fashioned spelling or typesetting practices, which typesetters call ligatures:

option plus ' = æ, as in encyclopædia.

option plus $q = \infty$, as in ∞ cumenical.

On older keyboards, option plus shift plus 5 or plus 6 produce "fi" and "fl" as ligatures.

Most of these may give you trouble with your spell-checker.

"Command" keys

None of the command combinations produces a new character on the screen. A few do interesting things quickly:

Shift plus command plus "," switches between open files.

Shift plus command plus 3 takes a picture of the monitor screen, which turns up on the hard drive.

Other combinations let you save (command s), cut (command x), and paste (command v), make characters bold (command b) or italic (command i), or quit (command q). They send you to the spell-checker (command l) or the thesaurus (command d), help you find (command f) or replace (command h) words, print them (command p), and so on. But no ligatures, math symbols, or Spanish questions.

If you're experimenting with some of these keys using an older w.p. program, specially the "option" combinations, you may find two "command" keys useful:

command plus] = increase type size by one point (e.g., from 14 to 15 pt.).

command plus [= reduce type size by one point.

A footnote

There is one oddity surrounding the option key that probably won't affect you but I should tell you about. I still use a 1992 Microsoft Works Version 3.0 for word processing. On some of the type faces that Microsoft started off with — Geneva, Monaco, and New York, for example — many of the option-plus-key combinations didn't work. They simply produced blank rectangles instead of the expected character. In the case of New York, apparently the least developed of all type faces, 20 characters using straight option were unavailable, and 32 more characters using option plus shift were blank:

Geneva, "option plus key" (12 point)

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Geneva, "option plus shift plus key"
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New York, "option plus key" (12 point)
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Odder still, though there were these characters you couldn't see on the monitor — and so you wouldn't use them — if you did happen to write something with an Ô in it, while it looked like a blank box on the monitor, when you printed it the exotic character, not a blank, was there. And in my case that was a printer of 1992 vintage too, a StyleWriter II.

Why these characters would be invisible in the standard point sizes but visible in non-standard ones still baffles me. In "Fonts" in the System Folder, the standard sizes of these early fonts are stored as separate files:

New York 9

New York 10

New York 12

New York 14

New York 18

New York 20

New York 24

but there is also a much bigger, nonspecific "New York" file, which presumably contains all the other type sizes. Maybe when the text being sent to the printer requires New York, the computer calls on the nonspecific file, which is 10 or 20 times the size of the standard files, and in it the printer finds the full range of characters for the standard type sizes. But why can't the monitor also call on the large nonspecific file? I don't know.

New York, "option plus shift plus key"

`0000000°00-0

Œ0′000"000""»

Å O O OOOOOOÆ OOÇ♦OOOOO¿

More oddly, it turned out that this was true only in the standard type sizes offered on the "Style" drop-down menu, 9, 10, 12, 14, and 18 point, plus 20 and 24 point. On all other type sizes from 4 to 72, the special option characters showed up just fine. You couldn't get Ô in 12 point, say, but if you changed the type size to 11 point or 13 point it was right there on the screen. It was years before I found that out.



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DIGI COMP1

If I may state the obvious, the basis of all commerce is supply and demand. All movable goods have potential worth but the potential value placed upon these goods only increases if they can be removed from their place of supply (or abundance) and brought to where there is a demand for them (or scarcity). Sometimes this movement is geographical, like bringing pineapples, bananas and gasoline by ship, rail and road to our local grocery stores. Sometimes this movement is temporal. If you could go back to the previous centuries when such items were plentiful and bring back what we now recognise as antiques you would find that the passage of time has enhanced the worth and reduced the numbers of these items. The diminished supply is pursued by the growing demand. Sometimes the rate of change in a specific technology is so accelerated that you need only go back a few decades to find this principle in action. For example: recently while out "sale-ing" (as in Garage Sale-ing) on a Saturday morning with Irma I found a simple boxed binary toy computer at a yard sale priced at \$3.00. The DIGI

COMP1 "first real operating digital computer in plastic" it said on the box. "A binary computer you can program."

Pretty heady stuff for 1963, twenty-one years before the Macintosh. For a mere toonie and a loonie I figured I couldn't go wrong, so I didn't haggle. I gave the man his three dollars and we were both happy. I must confess that my curiosity was not entirely academic. I wondered if there might not be a demand for this type of educational computer toy on eBay, considering the events of the past forty-one years.

I listed it on Saturday evening for \$9.50 US, hoping to make a few dollars on it. Garage-sale bargains and eBay sales have powered not only my own hobbies over the past few years but have generated surplus funds for digital toys and computer upgrades or complete systems for just about everyone in the family. By the Wednesday





after I listed it the bidding was up to \$103.00 US. By the Saturday following, the bidding had soared to an unbelievable \$212.00 US. And there it stayed right until just before the auction ended when a flurry of serious bids took the DIGI COMP1 up to \$433.00 US to my shock and extreme delight.

Irma picked up almost instantly on the coincidence that this \$3.00 garage sale item had blossomed into a new iPod for our eldest daughter who doesn't have one. I resolved to set aside a bit of it for a PCI project Macintosh and make sure it was something that would be fun for me and not just more toys for the kids.

The money order arrived in the mail a week later and it went right into our eBay account.

PowerPC 7300/180 (The Lazarus Project)

My first project for spending a few dollars of this "found" money from the DIGI COMP1 was for some RAM and a G3 replacement processor for the PowerPC 7300/180 project. A fellow I know who comes to the MaUsE meetings once in a while, when his schedule permits, rescued a couple of doomed 7300/180's from a fate worse than death and passed them on to me as non-working carcasses stripped of all RAM and missing various non-critical bits. I suspect that he knew that I could not stand by and watch a couple of perfectly salvageable PowerMacs go into a landfill.

One may well ask if I really needed a PowerPC 7300/180 ? Well, I must say I really didn't need one but I still vividly recall wanting one in the worst way a few years ago when "work-horse" 604e PowerMacs were hideously expensive and 180 MHz 604e was just an awesome processor compared to the 33 MHz 68040 in the Quadra 950 I was using at the time. I bought my Quadra 950 second or third-hand in 1996 for \$700.00 when I could not justify the outrageous price Apple Computers, Inc. was charging for a real PowerMac like the 7300. The 7300/180 came out in February 1997 and sold with a 2-gig hard drive and 16 MB of RAM for about \$3,000.00. The PowerMacs were considered the high-end of the Macintosh lineup and had better expansion possibilities than the consumer line of Performa models. Besides the faster processor (on a daughter card for ease of replacement) they had PCI slots for expansion cards and they had lots more slots than the Performas for RAM expansion. The idea of having a computer in the network again with a floppy drive and functioning ADB and serial bus that I can put OS8.6 and OS9.1 onto appeals to me. Right now I have an antique Mac IIci in the basement running OS7.6.1 fulfilling this purpose and the 7300 will replace it admirably. He also gave me four CD-ROM drives of dubious provenance from the same source and some various plastic drive sleds. The ROM SIMMs or cache SIMMs were still present and the stock minimal VRAM (2 MB per computer) but neither CPU had a CD-ROM drive installed and one was also miss-





ing all of the internal ribbon cables and had no hard drive. I decided to use this second 7300 CPU as a parts source if necessary or possible. The first thing I did was salvage the two 1-MB VRAM SIMMs from the parts CPU to boost the VRAM in the other one from the stock 2-MB configuration to the enhanced 4-MB configuration which is the maximum these models can address. Then I went onto the internet and asked on the Low End Mac SWAP List and on the Low End Mac PCI Owners List if anyone had a bunch of 5-volt DIMMs for sale or trade that would fit this PCI Mac computer. I had no trouble finding some inexpensive DIMMs for this computer.

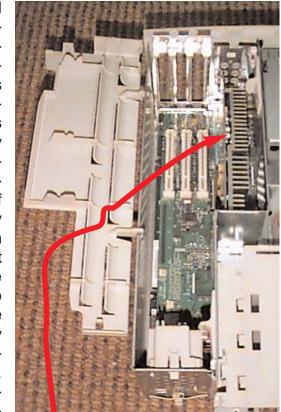
For those of you who might be confused by the term "PCI Mac" let me explain the term. The Quadra workhorse computers and some early PowerMac models had the need of expansion capabilities inside the CPU so people could add expensive video and other unique high-end cards to their computers to make them more. To allow for this Apple built the motherboards with "NuBus" slots that could accept plug-in NuBus expansion cards. By today's standards the NuBus technology looks pretty archaic but it was the best available internal interface for the 68040 and early PowerPC models. Its not unusual for NuBus video cards to have One, two or four Megs of VRAM. With the development of newer and faster technology the NuBus and its interface disappeared and the PCI bus with PCI slots replaced them. The PCI bus can transfer data at much higher speeds and radically improved and widened the potential capabilities of the Macintosh. For example PCI video cards can have up to 64 or 128 Megs of VRAM on them, more than used to be installed in entire systems. To further simplify manufacturing and reduce expenses Apple created the motherboards for many PCI models without a soldered processor. Instead they put a PDS or Processor Direct Slot on the motherboard so that the computers could be upgraded by remov-

ing the processor "daughter card" and inserting a faster one. For example, the 9500/120, 9500/132 and 9500/150, 9500/180MP, and 9500/200 all used the same case and motherboard with progressively faster daughter cards.

The PowerPC 7300 has eight DIMM slots and, like almost all of the "PCI" PowerMacs, uses special 168-pin 5-volt unbuffered random access memory DIMMs, of the FPM or the EDO type. That stands for Fast Page Mode and Enhanced Data Output. These RAM DIMMs occur in denominations of 8, 16, 32, 64 and 128 Megabytes.

My hope was that somebody had a bunch of pulled

32 or 64 Meg DIMMs that I could either buy cheaply or trade something for. I did not expect to be offered any of the 128 Meg DIMMs at bargain prices as these are still very much in use but I did get an answer from a fellow who had some ten of the 64-Meg DIMMs that he claimed he could let go for \$5.00 US each, including shipping. In other words, for \$40.00 US I could populate all eight DIMM slots and have a total of 512 Megabytes of RAM! Thats certainly plenty for a work-horse computer that Apple originally shipped with 16 Megs. With eight of the 128-Meg DIMMs the 7300/180 tops out at 1,024 Megs of RAM. To help put this into perspective I recall purchasing a 8-meg 72-pin SIMM in 1996 to boost the memory of the kids' Performa 6200 from the stock 8 Megs that Apple Computers, Inc. shipped it with to a whopping 16 Megs of RAM. It cost us \$240.00 Canadian for that single extra 8-meg SIMM. I'll be happy with 512 Megs of RAM for \$40.00 US.





My next upgrade was another harddrive. The PowerPC 7300 had a single Quantum 1.2 Gigabyte SCSI hard drive in it, probably the original drive from new, but I found a Quantum 4.2 Gig SCSI hard-drive in my Daystar Genesis that I liked better so I pulled it from there and put it into the 7300 below the original drive.

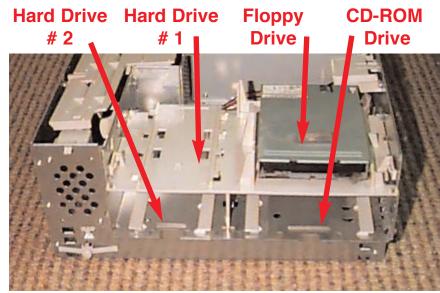
The 7300 has two hard-drive connectors on the internal SCSI ribbon and internal storage bays with room for two 3.5" hard-drives. Since I have two relatively huge ATA hard-drives in the

Daystar computer (30 and 40 Gigs) the little SCSI drive won't be missed. I was just using it as a scratch disk anyway. There are so many nice features to having more than one hard-drive. Besides just doubling your potential storage it gives you a simple and direct way to backup your files. You just "drag and drop" onto the drive icon to copy them to the other drive and the deed is done. Hard-drives do croak but its very unlikely that two drives will croak at exactly the same time. With an OS and drive repair utilities on each drive you can use each drive to repair and maintain the other. The ADB keyboard, ADB mouse, and monitor from the Mac IIci completes the restoration. I resolve that I will not put any USB or FireWire cards into this PowerMac 7300/180 and I will not attempt to hobble it by installing OSX onto it. I decided to resist the temptation to replace the 180 MHz 604e processor daughter card with a faster G3 card.

Who am I kidding? I resolved to do the psychologically safest thing and yield to the temptation to replace the 180 MHz 604e processor card with a faster G3 card just as soon as I can find something on either the Low End Macs SWAP List or

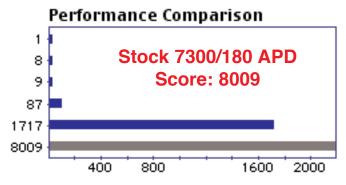
on eBay. Now that desktop Macs have moved on to single and dual G4 and G5 processors in excess of 1 GHz the prices have dropped on the older G3 processor upgrade cards made bv PowerLogix and NewerTech. They can be had for a fraction 17/6/04 at 19:26:27

Macintosh Plus PowerBook 145B Macintosh Ilci Macintosh Quadra 950 Sonnet, Power Macintosh 8100 This Macintosh



of their original cost and will do wonders for the performance of this 7300. The 7300/180 has only three PCI slots for adding upgrades and while this is a limiting factor for PCI cards it is not all bad news. Some of the G3 and G4 processor upgrade cards have compatibility and addressing issues with PCI Macs with six PCI slots but they all get along with the three-slot models.

Apple did not make G3 and G4 daughter cards for the PCI Macs but other companies did fill this demand. To make the upgrade cost effective and also worth doing I resolved to haunt eBay looking for a G3 upgrade of about 300 or 350 MHz for as little money as possible. The faster the better but 450 Mhz will be the limit. Beyond that the G3 cards are still too desirable to be found at bargain prices. The performance improvement should be noticeable if I replace the 604e with a G3 and double the processor speed, even if the 45 MHz internal bus cannot be accelerated. Here's a few pictures of the results of running Apple Personal Diagnostics on the 7300. As you can see the APD application benchmarks the stock PowerPC 7300 as vastly quicker than the stock Quadra 950 in every category of comparison. The 33 MHz



68040 Quadra 950 scored 87 on a scale that uses the Mac Plus as 1 and the 7300 scored just over 8,000 with the Apple 180 Mhz 604e processor installed.

I found a NewerTech "300/200/1.0" G3 processor upgrade card on eBay with a "Buy It Now" of \$25.00 US and I snapped it up. As the name implies this is a 300 MHz PCI-compatible G3 processor daughter card that has 1 meg of cache running at 200 MHz. Contrast this to the 180 MHz Apple 604e with 256k of cache running at 45 MHz. I certainly did not expect APD to work at all with the NewerTech MaxPowr G3 processor upgrade card in it but to my surprise it did try to check the speed of operations. Replacing the 180 MHz 604e processor with the 300 MHz G3 yielded the surprising results shown below. (The APD program cannot display results beyond four figures and has abbreviated the G3 result score).

The NewerTech 300/200/1.0 card instilled in the 7300/180 an improvement in performance that surprised and delighted me. The relative performance score shot up from the stock 8,009 to over 13,000 and internet and data transfer rates during filedownloading and file-sharing reached

speeds that I never would have expect-

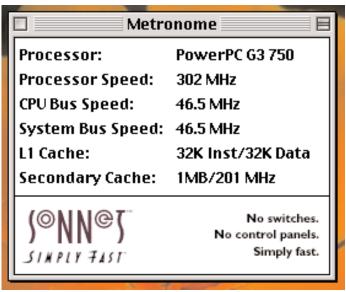
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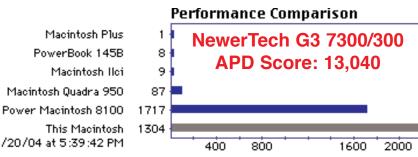
The NewerTech software installer put an extension and a control panel into the System Folder. The MaxPowr G3 CDEV allows me to set the cache speed to 201.4 MHz and disable the 6/20/04 at 5:39:42 PM

46.5 MHz 256k cache built into the 7300 in favour of the accelerated 1 meg on the card, and optimise performance based on RAM speed.

No wonder this card sold for about \$800.00 Canadian when it was first produced. This was perhaps the most striking performance improvement I have ever seen in any computer for an incredibly small expenditure of only \$25.00 US.









9600 Series

The Power Macintosh 9600's came out with a new look and easy-to-open case when Apple was facing some stiff competition from the clone manufacturers. The early 9600s (9600/200, 200MP and 233) used a Tsunami motherboard similar to that found in the 9500 Series PowerMacs and the faster 9600/300 and 350 models used a newer Kansas board. The "Clone Wars" were raging fiercely and faster clone models based on the Tsunami motherboard found in the 9500 were selling with more features and more RAM than similar Apple computers. This perhaps explains the numerous improvements in this machine over the previous series, the 9500's. The Level 2 cache was increased on some models from 512k to 1MB (9600/300 & 350) and moved from the logic board to the processor card where it could communicate with the processor at 100MHz. VRAM was also doubled on these faster models from 4MB to 8MB allowing 24 bit color on 21" monitors. Continuing with the doubling theme, the CD-ROM drive was bumped from 12x to 24x and the minimum RAM configuration was bolstered to a then-respectable 64MB, up from 32MB. Also new to the 9600 line was onboard Ethernet and an internal Zip drive. The 9600/200, 200MP and 233 MHz were known for their incredibly fast Barracuda SCSI drives. Unfortunately with the 9600/300 Apple discontinued use of the faster

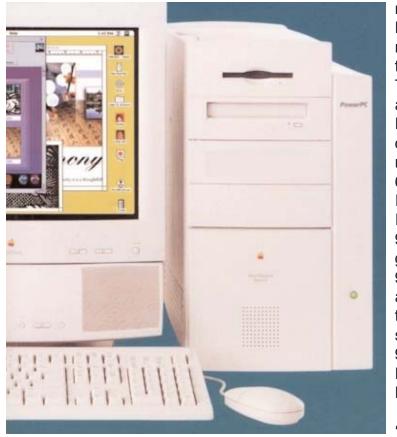




Seagate Barracuda drive in favor of slower IBM and Quantum drives. Of course all of these changes came when the new G3 machines were starting to make their debut. Many Mac publications, while hailing the many improvements in the 9600/300 and 350 models, were quick to point out that the new G3 machines were much quicker in most respects. That said, the 9600 is still a real workhorse and of course there are plenty of G3 upgrade options for these machine.

After playing with the 7300 and enjoying it so much it occurred to me to ask: am I alone in this or is there someone else in the MaUsE club who enjoys tinkering with these older computers as a hobby. If there are others of you out there I'd like to hear from you. A few pages for the Double Click about any project you have on the go would be appreciated by everyone who reads this newsletter. After all, it is YOUR newsletter and anything you do to enhance or upgrade anything Macintosh will be most welcome.

The prices of all of the recent Apple hardware has literally dropped through the floor to the extent



that every New Mac is a bargain, but you don't need to have a new Mac to have fun with Macintosh. You just have to be interested. With that in mind I'll tell you what ELSE I've been up to this month. Following hard on the highly successful and entertaining resurrection of the 7300 I decided to buy myself something that I've wanted for a long, long time, something that I denied myself when it was several month's pay back in 1997 but here in 2004 can be had for a few hours' overtime. What I mean is a 9600 series PowerMac.

The professional level Macs have always been differentiated from the consumer models by being expandable and upgradeable. The 9600 was the last, fastest, most expandable, and best of the 604e-powered G2 PCI Macs. Their replacement by the G3 models was a big step in the evolution of the Mac, just as big in some ways as the end of the 68040 processors when the first PowerPCs came out. Back in the 1990s people paid sums of money that are simply incomprehensible now for computers that appear to us simply quaint but just being the best Apple had to offer at the time justified their expense. With 6 PCI slots and the ability to hold 1,500 Megs of RAM at a time when

many computers shipped with 16, 32 or 64 Megs, the 9600 Series Macs were the second most desirable MacOS personal computers in the world until the G3 models eclipsed them. The only possible competition for the 9600/300 and 9600/350 were the hideously expensive Daystar Genesis MP 800+, 900+ and 932+ computers with their multiple-processor nPower daughtercards sporting up to FOUR 604e processors at 200, 225 or 233 Mhz. Since I already have one of these Daystar computers I decided that I should treat myself to the best 9600 I could find. Reasonable meant that I gave up immediately on the idea of acquiring a 9600/350. Not only are there too few of these around to expect to find a bargain but the ones that are still around are treasured or in use. I shopped eBay to see what prices were like for 9600/300 models with various RAM and Hard Drive configurations and then put an ad on the Low End SWAP List. It said:

"I have decided that I would like a really nice PCI Mac, one of the best. Does anyone who has moved on to G3 and G4 computing have a retired 9600 languishing in a closet?"

The response I got was most gratifying. I was offered some variously configured 8600/300s, a 9500/200 with a 450 MHz G4 card in it and 1,2567 Megs of RAM, some 9600/200s and 9600/300s, with anywhere from 96 to 720 Megs of RAM, and the prices were from \$50.00 to \$800.00 plus postage. I almost settled on a 9600/300 from a fellow Mac-user in Texas who agreed to have it sent it to me with 720 Megs of RAM and a 4-gig SCSI hard drive, USB and SCSI PCI cards for \$160.00 US, which included a \$60.00 USPS charge for postage.

That \$50.00 to \$60.00 US (about \$67.00 to \$80.00 Canadian) for regular surface postage may sound excessive but it was so consistently quoted as the cost by all of the Americans I responded to my advertisement that I suspect it is the going rate for sending a parcel this heavy via USPS. It stands about 17 inches tall and ten inches wide and 17 inches deep and is as heavy as a concrete block.

I really hated to agree to allow a Macintosh computer to be mailed all the way from Texas and my experience in the past has been that when a large box shows up at Canada Customs, even if there is no actual duty charges, people at the Ontario border like to add on GST, PST and a Customs inspection charge. With the cost of shipping lumped in with the cost of the computer for shipping insurance purposes, I could wind up paying taxes on the full amount that the parcel is insured for, instead of just on the price of the CPU. All of that would add an extra \$45.00 Canadian or more to the sale price. A lot can happen to delicate electronics between Texas and Ontario, most of it unpleasant.

Then I found one REALLY tempting 9600/233 with 4-gig HD and 96 Megs of RAM on eBay for \$52.00 US from a Canadian seller who lives in Whitby, Ontario, and I did bid on it. I translate "Located in Whitby, Ontario, Canada" as meaning no \$60.00 US for USPS shipping charges from Texas, no GST and PST at the border, no phony customs inspection fees, no accidental bumps and bangs in transit, and I get to actually see it **before** I pay for it.

It sold with 8 bids for the Canadian equivalent of \$59.58 US which just shows how desirable these Big Macs still are! This computer sold for \$4,200.00 US in 1997 and it has retained 1.4% of its original value. Now thats what I call a bargain.

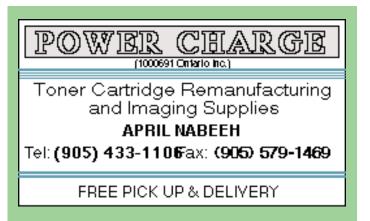
After the auction ended I picked it up in Whitby and it looks like it has never been used. Just as the eBay description suggested, this unit was





basically untouched from 1997 and still had the original 4-meg video card, 4-gig hard drive, and no additional goodies. There were enough RAM chips added to bring the total up to 96 Megs but other than that it was in 1997 stock configuration and in "As New" condition. I'm sure there are some goodies on eBay that will rectify that.

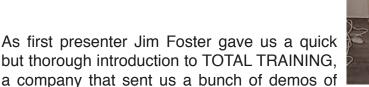
As you can see from the pictures this is a BIG computer. I don't know why Apple calls it a "MT" or MiniTower.

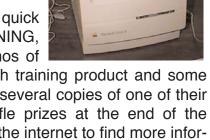


June 23rd General MaUsE Meeting Report

Jim Foster, President of the MaUsE Club, welcomed MaUsE-keteers and opened the June MaUsE meeting. John Kettle gave the Treasurers Report and delivered an update to the Membership Report. welcoming new members. We had four new members since last report and two of them were present at the June Meeting.

In honour of 2004 being the twentieth anniversary of the 1984 Macintosh, marking twenty years of virtually virus-free computing, Chris Greaves brought in and set up one of the relics from his dim past. Just think: someday the new Macintosh computer you are using right now may be a relic of your own dim past. Only time will tell.





their excellent program-specific Macintosh training product and some brochures highlighting their methods and several copies of one of their commercial products to be used as raffle prizes at the end of the evening. Research TOTAL TRAINING on the internet to find more information about their products for Macintosh users. More about TOTAL TRAINING later in this issue.

We try to get someone from Apple out to our June meeting every year to finish off the season with a bang. The special Guest Presenter at our June 23rd meeting was Patrick Lee from Apple Computers Canada, who spoke at length about some of the new hardware products

we can expect to see soon at Apple stores and showed us how GarageBand software can be used to create and edit music.

Airport Express is a device that looks very much like the transformer part of the AC Power Adapter that ships with new iBooks except that it has three ports on one side to accept an ethernet cable from a cable or DSL modem, a USB port for connecting a printer to, and an audio out port for speakers. For those of us with airport cards in our computers this little device functions as a repeater or extender of our wireless network and as a wireless bridge to connect our network to a USB printer and as an audio connection to which music files can be sent via a wireless network. If any of that sounds confusing, think of it as an ethernet hub with speakers and printer attached to it that you can access





from any computer with an Airport card so you can include an ink-jet printer and your home entertainment and stereo system into your network without wires. See the Apple.com site for pricing and availability.

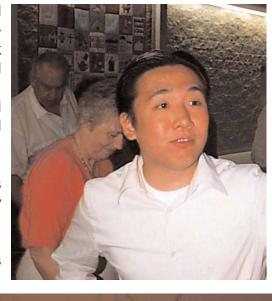
Patrick also gave us the statistics and specifications of the new Apple dual-2.5 GHz G5 computers which are so incredibly advanced over the dual-processor 1.4 GHz G4 computers of two years ago that the mind boggles. Ouch. Thats the pain of a boggled mind.

To top off the evening Patrick, who is also an award-nominated professional musician, showed us how to use a few of the marvelous effects found in iLife's GarageBand and Apple JamPack software. He brought along and connected a midi keyboard and Fender electric guitar to show us how loops can be created, ported into a computer enhanced and united with other musical loops and effects to create unique customized background music for videos and movies.

The meeting ended with the usual stunning array of raffle prizes donated by TOTAL TRAINING, our own Jim Foster and by Apple Computers, Inc.

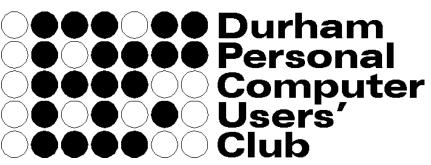
The grand prize, graciously provided by TOTAL TRAINING, was awarded to the entire club rather than just to one person,

because of the nature of item. Although it was present at the June MaUsE Meeting it was not awarded to any one member of the Club but will be made available to each member one by one. How this will work was explained briefly by Jim Foster at the meeting. For more information and for those of you who were not at the meeting and are interested, please read the next article carefully.



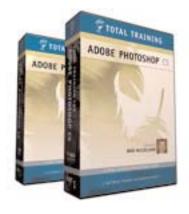






Meets on the 2nd Thursday of each month at Faith United Church, 1778 Nash Road, Courtice

www.durhampc-usersclub.on.ca



Special TOTAL TRAINING Offer

As I indicated in the June 23rd MaUsE Meeting Report, there's more to TOTAL TRAINING than just what we saw at the meeting. Besides the CDs and brochures they provided to the Club in exchange for demonstrating their product line they also donated to the club an amazing package consisting of seven DVDs comprising 26 hours of training videos for users of Adobe Photoshop CS, the Creative Suite version of their latest Photoshop release. This set of training seven disks retails for \$299.00 US (about \$460.00 Canadian) and it was offered to the club by TOTAL TRAINING with the understanding that it could be raffled off at a club meeting **or used**

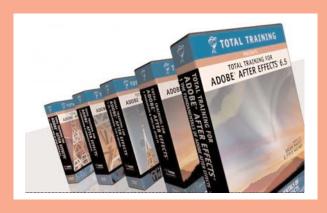
as a club resource and

circulated amongst the membership. There are so few members of the club who actually have the need of this unique and exclusive training expertise and who actually have copies of Photoshop CS and are running the right system that it was deemed inappropriate to raffle the DVDs to the membership. There was just too great a chance that the DVDs would be won by someone who would never use them or who would never have a use for them and they would be lost to the club. Like in many raffles open to the public with one big non-exchangeable prize, isn't it always Grandma that wins the Harley-Davidson.

As MaUsE Resource Librarian I have taken on the responsibility for keeping this set of DVDs together and lending them out to members on a first-come first-served basis. It is essential that these DVDs be properly treated as a resource belonging to all of us and not anyone's private property to be lost, neglected, abused,

lent out to friends and relations, or split up so that one or more DVDs gets lost or broken. The value of this instruction course would be seriously diminished if one or more of the DVDs were lost or damaged.

Contact: Michael at 905-576-2097 to get on the list to borrow these DVDs.



PROGRAM 1: Adobe Photoshop Fundamentals

Lesson 1: What Adobe Photoshop Can Do

Lesson 2: Launch & Prep Lesson 3: The File Browser

Lesson 4: Workspace & Navigation

Lesson 5: Image Resolution **Lesson 6:** Rotate & Crop

PROGRAM 2: Color Correction & Camera Raw

Lesson 1: Color Cast & Matching Lesson 2: Hue Shift & Colorize Lesson 3: Auto Corrections & Levels Lesson 4: Curves, Shadows & Highlights Lesson 5: Adjustment Layers & 16-Bit

Lesson 6: Camera Raw

PROGRAM 3: Select, Paint & Edit

Lesson 1: Selection Basics Lesson 2: Smart Selections Lesson 3: Working with Brushes

Lesson 4: Dodge, Burn, Smudge & Sponge

Lesson 5: Clone, Heal & Patch **Lesson 6:** Replacing Colors

PROGRAM 4: Layers, Blends & Channels

Lesson 1: Introducing Layers Lesson 2: Links, Sets & Comps Lesson 3: Opacity & Blend Mode

Lesson 4: Layer Styles Lesson 5: Masks & Channels

Lesson 6: Working with Spot Colors

PROGRAM 5: Filters & Distortions

Lesson 1: Filter Basics

Lesson 2: Simulating Sharper Focus Lesson 3: Blurring & Averaging Lesson 4: Filters & Masks Lesson 5: Painting with Filters

Lesson 6: Liquify

PROGRAM 6: Text, Vectors & Output

Lesson 1: Type Basics Lesson 2: Specialty Type Lesson 3: Editable Type Effects Lesson 4: Vector-Based Shapes Lesson 5: Panoramas & Slideshows Lesson 6: Printing & Packaging

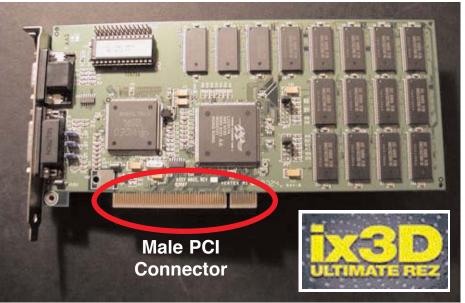
ix3D Ultimate Rez PCI Video

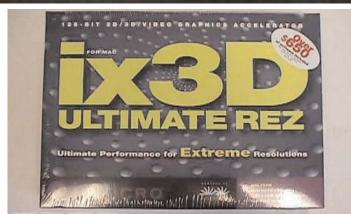
The expansion card on the right is a ixMicro Ultimate Rez PCI interface video card. The way you recognise PCI expansion cards is that they all must plug into a skinny PCI slot on the motherboard so they all have a row of metal contacts printed on a thin plastic tang on the bottom of the card about three inches long with a slot in it about half-an-inch from one end. Other expansion cards might have a tang 5 inches

long (ISA) or might have a big plastic connector with rows of pins (NuBus) or a slightly longer three-sectioned skinny tang (AGP) but once you've seen a few PCI cards at garage sales you tend to recognise them instantly.

The 9600, unlike just about every Mac before it, has no video capability built into the motherboard. No slots for VRAM SIMMs and no video circuitry. Because of this it has to have a video card installed in one of the PCI slots. My 9600/233 came with the stock 4-meg Twin Turbo video card that Apple shipped it with. While there is nothing absolutely bad about the card, it is one of the things that Apple changed for the next better 9600 model: the 9600/300 shipped with an 8-Meg video card so I figured that upgrading the video, if it could be done for a reasonable price, would be a nice idea.

I looked on eBay and there is almost NOTHING between the 2 and 4-Meg PCI video cards that people are dumping and the 32 and 64-Meg cards that are selling for as much or more than I paid for the entire 9600. What I did see was a listing for several 8-meg ixMicro Ultimate Rez video cards. These cards from 1998 are contemporary to the 9600 and were about \$700.00 US, over \$1,000.00 Canadian when introduced. I found an auction ending soon, emailed the Seller to verify that he would ship via USPS to Canada for \$7.00 and put in a high id of \$10.50. The card started at \$9.99 and there were no more bids so I got it for just under ten US dollars.





The card I got was not "brand new, unused, in the box" like I would have liked, but those cards are available on eBay and usually go for a lot more money. I really don't care enough about a cardboard box to pay an extra \$40.00 for it and the driver software for the card is freely down-loadable on the internet.

Since I am going to be running operating systems 9.1 and earlier on the 9600, I'll want a video card designed to work with these systems. Back in the late 1990's ixMicro made excellent 2D/3D video accelerators for PCI PowerPC computers. The ix3D Ultimate Rez is a long-form PCI card with 8MB of video RAM, delivering 128-bit 2D and 3D acceleration at 32 bits per pixel (millions of colors). The power plant on this video accelerator is IXMicro's TwinTurbo 128-3D. The card has one standard Apple DB-15 and one standard VGA connector and supports VESA's DBMS desktop power management. Stated performance specs for 2D graphics are impressive. As for QuickTime acceleration, the ix3D will speed QuickTime

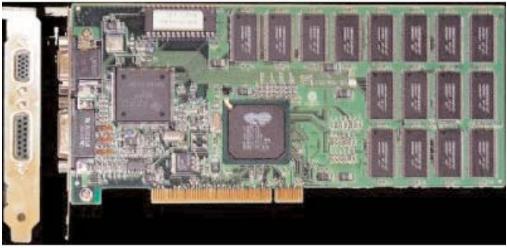
MPEG playback at 30 frames per second (fps) in large window sizes (640 by 480 or bigger).

The ix3D accelerates QuickDraw 3D RAVE, but not the OpenGL standard. IXMicro claims a rate of 1.2 million triangles per second, which is serious polygon performance, and boasts speedy filtered bilinear ren-

technique dering for making smoother-looking texture maps) that can generate a maximum of 65 million texture pixels per second. The card supports hardware Z-buffering (where depth information about 3D scenes is kept); sports perspective-correction features (to make sure textures actually look as though they exist in 3D space); and accelerates alpha-blending (transparency) and fog effects. Real-world 3D applications show that the ix3D is very fast. Little problems aside, in 1998 the ix3D Ultimate Rez delivered the tweakiest 2D/3D performance you could buy for under \$2,000 US. If squeezing the last squirt of speed from your graphics hardware at extremely low cost is your top priority, then look no further. You can get top-of-the-line 2D/3D performance from this little 8-meg video card for next to nothing...

I tried to buy one of these video cards on eBay a few years ago to use in a PowerPC 6500 and won one for a very reasonable \$35.00 US. When the card showed up in my mailbox unfortunately it







was the card shown below. This is a very similar ixMicro PCI video card made by the same company but it is the ixMicro Twin Turbo card, not the ix3D Ultimate Rez card, and the eBay Seller had accidentally sent me the wrong card and sent my card to someone else, never to be seen again. Since then both of these 8-meg ixMicro PCI video cards have gone the way of all aging computer upgrades and I was not terribly surprised to see them both going for less than fifteen dollars.

One of the features that make the Ultimate Rez card still desirable, even after all these years, is that ixMicro cards were Apple OEM with some of their high-end PCI models and so are supported in OSX. If you want to install OSX onto an old PCI

Macintosh using XPostFacto or the Sonnet PCI OSX enabler software you will need to spend a lot of money for an upgraded ATI video card OR pick up one of these cheap Twin Turbo or Ultimate Rez ix3d video cards.

Another plus is the ixMicro software that comes with the card (still **Display Controls** available as a free download). The control panel that the ixMicro Resolution software installs allows much more access to video features than Show: Recommen.. **‡** the regular Macintosh 2D Controls 640 x 480, 75Hz • system software. The 800 x 600, 60Hz 800 x 600, 72Hz software provides sepa-800 x 600, 75Hz ☑ Enable QuickDraw Acceleration rate controls to enable |800 x 600.85Hz ☐ Hot key toggles QuickDraw acceleration on/off 832 x 624, 75Hz and disable 2D and 3D omd + otrl + 1 Color Depth acceleration for text. ☑ Enable picture caching 256 🔵 Grays QuickDraw and Thousands ☑ Enable text acceleration Millions QuickTime. Screen res-Colors ☐ Hot key toggles text acceleration on/off olutions are available Monitor Characteristics ☑ Enable QuickTime acceleration from 640 X 480 right up Sync on green ☐ Hot key toggles QuickTime acceleration on/off to 1280 X 1024. The Cursor Size control panel also ☑ Enable averaging when scaling enables panning and zooming and provides a Cancel 0K complicated "colour Done management" system with more windows than just the one shown here. 3D Controls Colour correction curves 2D Controls Display Controls 3D Controls and ICC profile informa-Enable 3D acceleration tion are available and a Display frame rate indicator special window to opti-Pan & Zoom mize settings for Games, Advanced Controls Internet, 3D Rendering, Cancel 0K CAD/CA, Desktop Publishing, DVD Viewing Color Management Video/Multimedia Photography, Color Correction Settings Viewing, and VRML (Virtual Reality) est Image Contrast (Gamma) \/ Whitepoint (temp) viewing. G: 1.00 = B: 1.00 = Optimized Settings: Pan/Zoom Custom Setting ŧÌ Pan/Zoom Delete Save As... ☑ Zooming Enabled Apply Settings to Current Profile Zoom In Key Profile Settings cmd + ctrl + 4

Recalibrate using Colorific

Zoom Out Key cmd + ctrl + 5

Cancel

OK

Select the ColorSync profile to use for this device:

Done

Display