

ewving Up Your New Rendering Engine*!

Hello, and welcome back to "From Another Perspective," the monthly 3D column in Apple Wizards. This is a column dedicated to 3D topics including how-to's, tips and tricks, and general 3D babble. As an eventual goal I hope to teach you the language of 3D. By reading this column regularly, I can assure you that you'll be ahead of the game when it comes to solving a particular problem with many of the 3D illustration and animation packages available. This column is written from an artist's perspective, not a scientist's. While there's bound to be some technical mumbo-jumbo, I do keep it to a minimum.

In this month's column I'm going to encourage you folks to buy a new computer. I know, I know, you've thought about it for a long time and eagerly scanned those hundreds of catalogs per week that show up in your mail, but let me just give you a little nudge to act before the end of the year. Think of the tax write-offs you can get!

on't Be Afraid!

Below is an image I'll refer to as the test image. The idea is to compare apples to Apples (no pun intended) when we talk about rendering speeds. The specific render settings (see screen shot below for Studio Pro's render panel) are unimportant here because we're not evaluating how fast we can get an image to render. We are, however, comparing the exact same file with the exact same settings on three different computers. By the end of this column, if you've been "thinking about" a new computer, you'll be on the phone ordering one.

The statistics for this image are as follows:
Application used: [Strata Studio Pro 2.5](#)
CPU: [originally created on Power Macintosh 8100/80](#)
Model: [1.98 million polygons](#)
File size, with textures: [15 MB](#)

[n the Beginning...](#)

It used to be that you could struggle, but get by, with a little, old computer. You still can in some cases, and this column is not advocating the mass ditching of those old machines. Put them to use. A computer, as long as it works, can always be put to use doing something. Your Quicken, word processing, or off in the corner chugging away on an experimental rendering it doesn't matter how long it takes to complete — a new spin on the "little engine that could." In this case, that "old" computer is a Power

Mac 8100/80 with 232 MB of RAM.

8100/80 with 132 RAM

Rendering time on this configuration: 01:04:08

ake Your Move...

There are a few of ways you can get ahold of a faster computer. One possible way is to upgrade your old machine. There are companies out there which do just this. They've taken many an out-dated model and figured out how to cram a new brain into it. This is probably the most cost-effective way for many people to get more speed. I resisted for a long time, but finally did some exploring and wound up with a [Newer Technologies G3/240](#) for my old 8100/80. The speed increase was unbelievable, breathing new life and functionality into this aging "super" computer of yester-year. The price wasn't exceptionally cheap, but the amount of RAM that I had in the computer encouraged me to take this route. Installation was easy, and within a short time I was rendering at 240 MHz rather than 80 MHz. There was a notable speed increase to be sure.

8100/80 with a G3/240, 1 MB Backside Cache

Rendering time on this configuration: 00:12:09

pple's Power Macintosh G3/300

The other option is to spring for a new machine. Before you shake your head and say you can't afford it, consider the following.

If you're going to get into 3D, you can get along just fine on a Performa running 32 MB of RAM and using program X (Program X is used as an example to represent any 3D application that will run on an old processor and a low amount of RAM — there's not actually a 3D program called "Program X" to my knowledge ;-). Your projects and performance will be severely hampered, but in theory you could get away with it. Will it be an enjoyable experience? No. Will you really get into 3D this way? No. So we need establish some guidelines that will allow you to actually enjoy what you're doing.

Modern-day 3D software is written for modern-day computers. This only makes sense. It's no secret that the software and hardware industry are more or less evolving together — each is basing many of their features and

functions on what the other is doing. With this in mind, don't expect to buy modern 3D Software and run it on an antiquated machine. It probably won't work. As software becomes more sophisticated, RAM requirements seem to grow by leaps and bounds. This is just the way it is.

At the introduction of the G3 product cycle there were questions pertaining to whether they were going to be as good for 3D work as the 604es. Why? Because of the way the FPU (Floating Point Unit, or floating point functions) were performed. Let me be the first to tell you, the G3s are astonishingly fast for 3D work. Without getting into the nuts and bolts of why, just know that they are.

Power Macintosh G3/300, 320 RAM
Rendering time on this configuration: 00:09:34

Though not thought of as top-of-the-line anymore, this is the machine I'll use as my "modern-day" computer. The same test image renders roughly 21% faster on the G3/300 than the G3/240 upgrade, and an astonishing 630% faster than the original Power Mac 8100/80. I want to cry when I think of all the time I could have saved. Not only does the G3 perform the final rendering faster, but screen redraw time and general calculations while working are so fast you won't have time to drum your fingers on the desk. Want to apply a new texture? No problem: apply it, do a spot render and check the positioning. Don't like it? No problem. Do another one. The difference these new machines make in your work flow are beyond description. Looming deadlines don't keep you up at night, clients smile at you more, and when you get a break and want to play Riven or Unreal — hey, you've got the horsepower to really make them fly.

The bottom line, people, is that doing 3D work today and in the future is not what it used to be years ago. Software is getting extremely powerful (Strata just released a motion-capture version of their popular Studio Pro), and that's great for the artists. You no longer have to be a programmer to add self-illuminating objects and volumetric lights to your scene. What does that mean?

Stay tuned and you'll find out ;-).

Until next time, have a great holiday season, and happy rendering!

*For clarity's sake, the term "Rendering Engine" is often referred to as the actual portion of the 3D application that performs the rendering, not the computer that is running the program. I took a little creative license here.

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