MG Interview: Eric Parker

by Tuncer Deniz

Eric Parker is regarded by many as the father of flight simulators on the Mac. His first creation, Hellcats over the Pacific was a phenomenal success and set a new standard in the flight sim world with its great graphics, fast animation, and fun game play. Now, Parker is ready to revolutionize the flight sim market yet again with A-10 Attack, his latest and most challenging creation.

IMG: Can you please us a little bit about yourself and your background before you started Hellcats?

Parker: Way back in the wee early days of the Mac (1984), I formed Megamax along with Jeff Morgan (later of Graphic Simulations) and Mike Bunnell (another SMU graduate).   We released Megamax C for the Macintosh - which was one of the very first C compilers for the Mac.   Eventually we succumbed to the Think C steamroller, and I got out of the Mac market for a while.

IMG: So what attracted you do flight sims on the Mac?

Parker: Well, it all started while I was working as a contract programmer for an image processing company in Plano TX when the Sun SparcStation came out.   I got to play with one, and I started thinking about how to make the SparcStation do fast 3D graphics.   The SparcStation had a very fast CPU for the time (about 12 MIPS), and a large 1K x 1K 256 color screen. But it had no hardware graphics and the bus interface to the screen memory was really slow.

One night I had one of those "aha!" experiences and I knew how to do it.   A few days later I had it working.   I knew it was valuable, but the SparcStation isn't a mass market machine. I decided to port it to the Mac which was similar to the SparcStation in that it had a slow bus and a big 256 color screen.

IMG: Hellcats was a monumental breakthrough in the Macintosh flight sim market. How long did it take to develop?

Parker: It took 2 1/2 years to develop. There is more to a flight simulator than just fast 3D graphics, and I was also working full time at the company in Plano.

IMG: The models and database for Hellcats were created on SGI machines. How does this exactly work and how do you bring the models into the Mac?

Parker: Initially the models for Hellcats were done by hand.   I created a simple database language so that you could use a text editor to type in the (X,Y,Z) coordinates of the vertices of the models.   The training mission was done this way.   This was of course tedious, and later we used a program called MultiGen which runs on SGI equipment.   I wrote another custom program to read its database format.

IMG: What were Hellcats' strengths and weaknesses? Why do you think it did so well on the Mac?

Parker: I think because the graphics were so fast. I was able to concentrate more on the simulation aspects and do some fairly advanced things that I wouldn't have been able to do otherwise. For example, I calculated actual lift and drag forces for the wings and used these forces to move the aircraft (the angular momentum however was faked with angle rate formulas like most other simulators).   Also, the enemy pilots had to fly their aircraft just like you - by changing their throttle, aileron, elevator and rudder settings. There were no canned motions which meant that the aircraft flew less predictably.

IMG: Hellcats was written by yourself but published by Graphic Simulations. How did this relationship come about?

Parker: Well, after I had the demo of the 3D algorithm running on the Mac, I wrote a letter to Spectrum HoloByte proposing to port Falcon to color machines.   Before I sent the letter, however, I showed the demo to Jeff in hopes I could get a better royalty since Spectrum was such a large company.   Jeff was interested and later started Graphic Simulations to market Hellcats.

IMG: When did you start working on A-10 Attack?

Parker: November of '92

IMG: What's so unique about the real plane? What attracted you to it?

Parker: Its fun to fly near the ground!   In the 'hog you can still see what your doing and fly seat of the pants in and out of canyons.   In a fast mover, the whole shooting match is decided at 20,000 feet and 25 miles out.   Also, the A-10 has ELEVEN pylons (many of which can hold multiple store racks) and the biggest gol-darndest gun you ever seen! 'nuf said.

IMG: Now that A-10 is about a month or so from shipping, did you achieve all the goals you set out to do for A-10?

Parker: Obviously there's always "one more feature" that you want to add, but overall I am very happy with how it wound up.   I set out with some very ambitious goals.   I'm especially proud of the friction model which is a very difficult thing to get right in a rigid body simulator.

IMG: A lot of time has been spent on making A-10 Attack feel like the real thing with extremely realistic flight models, etc? How did you accomplish this?

Parker: Well, since I had a full rigid body simulator, all motion of the aircraft had to come from forces being applied to an inertial object. In order to make it fly at all like the real airplane, I had to find the wing surface area, airfoil shape, air density, wing efficiency, center of gravity, strut spring and dampening coefficients etc. By the time I was done with all that, it flew very realistically. The performance characteristics of the simulator are not a result of simple rate formulas which relate the desired performance (such as climb rate) to the control inputs (such as throttle), but rather are the effect of carefully modeling the forces that the aircraft undergoes, calculated from basic design parameters of the aircraft and using standard aerodynamic and physics equations.

IMG: Any plans on developing non-flight type games?

Parker: Like I said, some of the core technology in "A-10 Attack!" lends itself to other types of games, we'll see what develops.

IMG: What kind of games will the PowerPC allow you to create (ie. texture mapping, etc)?

Parker: I think people are going to be amazed at what comes out on the PowerPC in the next few years, but you have to realize how long it takes to develop software from the ground up for a new platform. Sure you can port something you're already doing on the 68000 Macs, and some of it will be good. But when a programmer gets to start with a clean slate and the kind of performance the PowerPC has... I think some really impressive stuff will be showing up.

IMG: Do you have any personal favorite games, Macintosh and/or PC?

Parker: I like SimCity 2000.