

Crash Course in Particle Systems

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I know this is a question many of you guys probably have, so here's a crash course in particle systems I wrote a while back.

First of all, find a particle system you want to edit, such as the frag grenade.

You want to leave the system behavior and the physics constants alone.

The first part that you would edit is the particle types. There are tons of flags you can use, most of them you can only learn what they do with trial and error. The ones you would probably want to use is stuff like Particles die in air\water\ground, which is what you would use to make something disappear when it hits a surface. There is also a don't draw in fp/3p flag, which means the particle won't show up in fp or 3p. Pretty self explanatory.

The next field is for the initial particle count. If it's a nade explosion, you might want a value between 25-35. For other stuff, like the new CMT "phantom gun turrets" we use a value of like 3, to keep FPS high. Particles are more taxing on the engine than polies. That is why airlifts in h2ce are single planes with a shader, or in Zteams PP or ghost, they use shaders on a single plane to simulate particles streaming down.

Next is the radius, also explanatory. It can make a huge difference. The Frag nade in H2 Coag is simply the same as the brute shot explosion, but with a larger radius. I'm pretty sure there weren't any other edits to make such a huge change; then again, it was nearly 2 years ago.

The particle creation physics are explosion, normal, and jet. Jet is for the tubes on POA, explosion is for explosion, and I can't think of a type of particle that would use normal off the top of my head.

Next is physics constraints, leave those alone as well.

Now your in states. Whatever your tag your editing, leave this section alone, except for the color multiplier if you want to tint it all.

Now to particle states. This is the easy and fun part. first you make a name, such as smoke, fire, ashes, death. Go to the bitmaps section, choose the bitmap you want to use. If your making a custom bitmap, remember that you don't want harsh edges, and that white in the alpha means less translucency. Now go to duration bounds this is how long you want the bitmap to display. I use like, .2, .4 seconds as a value, because while in combat, 1 second is a LONG time.

Transition time bounds are how long it will take to change to the next particle states. Then you have sequence index, chooses the sequence if you're using a sprite. Remember that your first bitmap in a sprite is 0, not 1.

Then you have scale, scale is how many pixels will be used per world unit. The damage effect of a stock h1 grenade is 3.5 world units. For CMT frag nades, I use .01 to .016.

Animation rate, that's how many frames per second you want your particle system to animate if it's a sprite.

You have rotation rate, that tells you how fast its rotating. I have my nades set to 200 and 400 degrees per second, probably not the best value to use :X.
changes

Now you have your color values, I normally use a dull yellow, and a dull orange.

now you have the radius multiplier, once again controls the radius of world units for the particle.

Now you have point physics. TBH, I don't think anyone knows what to do with these, just use the normal frag one.

Now you have shader flags, non linear tint relates to the colors you set. don't overdraw fp weapon, that's suppose to stop a particle from overdrawing your fp weapons, self explanatory. sort bias, teh lag says they probably have to do something to do with how particles are rendered over each other, or sequence index. I never use it, so, IDK.

Then you have your frame buffer blend functions. These depend on your bitmap, just refer to another particle system to see how they relate to other bitmaps. And for frame buffer fade mode just set it to none.

If anyone has any other questions about particle systems, and particle effects feel free to ask.