

Easy ways to screw up your map

(And how to fix this!)

By: Vonderbakluft

This document describes some easy ways to screw your map in compile times, FPS, lighting errors, visdatasize and map/bsp size.

It's intended to give you directions in finding out where you went wrong when one of these things drop vastly in negative way between only a few editing actions.

Compile times, FPS, Lighting errors, visdatasize and map/bsp size are the 5 things you always need to check after each compile.

In general they are easy to fix immediately after the mistake occurred but are hopeless to fix when a combination of those appears in your map.

I have seen many promising maps being lost by unresolvable errors caused by a too late awareness that something went really wrong.

The sequence i give is not in order by severity (if that's comparable at all) but by theme.

The document is far from completed and will be updated.

1) Duplicated skyboxes/brushes

To be sure to increase your VIS compile time by a 1000 or 10000% do this. Make a duplicate skybrush at one of your boundary ones (the ones they separate your map from the void) and your VIS compile of 30 minutes will take a night and a day. I've seen increasements of 100 times by making this error.

2) CSG subtracting structural brushes.

You already knew you should also snap-to-grid your brushes you wanna use to CSG others else you risk infinite brushes. You also know that (free) rotated brushes aren't snapped to grid anymore. If the brushes you want to be splitted up by a CSG subtract are structural you're guaranteed to increase your VIS compile 10 minutes each CSG subtract. The reason is that each structural brush makes portals. Portals are needed for the VIS engine to chop up the map in parts to see which of that chops can see each other. By CSG-ing your structural brush you make many little of them with their own portals, that need to be calculated.

The VIS compile will increase in an exponential way for each portal in your map. Same for your visdatasize; It's the easiest way to pump it above the maximum allowable.

To screw it all completely CSG your structural brush when it isn't snapped to grid. You risk the "tiny portals" error when compiling Tiny structural brushes that are smaller than the grid but still generating portals.

Make your life easier and CSG only detailed brushes and make the needed remaining parts structural after CSG

3) Odd formed structural brushes

If you want your VIS compile to take forever you can also try making odd formed structural brushes (octagonal ones, zillion-gonal ones) and of course don't forget to CSG them or clip them in all 3 dimensions on all edges.

Of course clipping a structural wall to let it fit to a floor won't screw anything, but weird forms with many faces (rock formations!!) must be detail. If you need your rock to be structural for FPS issues, make

1st a big square bone and make the odd formed visible parts as detail brushes around it.

4) BSP compile option: -blocksize 0

To help you lower your FPS with an amount of 15. Many mappers love this option cause it decreases compile times and visdatasize but the drawback is a serious FPS drop. Even some very experienced mappers use this one in their final compile, but if you need this kind of methods to keep compile times or visdatasize in control you already have made some huge errors earlier in your map. (Especially one of the ones mentioned above)

5) Duplicated or overlapping animated models (trees!)

Nice FPS downers. Especially when being in front of them or have your scope on them. You can debug them by using the -visiblestatic option in the BSP compile phase. It results in an ingame draw of all boundary faces of your models so you can easily see overlaps of trees that seem to be visually separated in a normal compile. Overlapping animated models load your videocard as nothing else

6) Duplicated brushes with masked animating textures (water!)

Gives the same rendering probs as the trees and blast your videocard same style.

7) Infinite small texture scaling.

Good way to blow your Mtex value. Will be tessellated out when looking at it at distance but when in neighbourhood it surely blasts videocard load. Happens often by using free rotation when having Texture lock for rotations off or by clipping already textured faces. Do allways texturing at last

8) Copying not snapped-to-grid brushes from one map to another.

Can help really in increasing your map and bsp filesize. Especially when the faces between the planepoints that aren't snapped to grid are textured. Donno exactly why but i think some kind of infinite texturing happens. I once blow my map from 1MB to 8MB by transferring a single brush that way.