

# WEATHERING

*(I am posting this for legacy purposes. This is way old - 2003 old. By today's standards the Pits'n'Peak method would be hardly applicable to the current density of highpoly cages. But the idea of using a cavity mask for dirt and weathering still applies - it is just easier to generate in Zbrush and Crazybump now...)*

This tutorial deals with the creation of a worn out look using vertex blending.

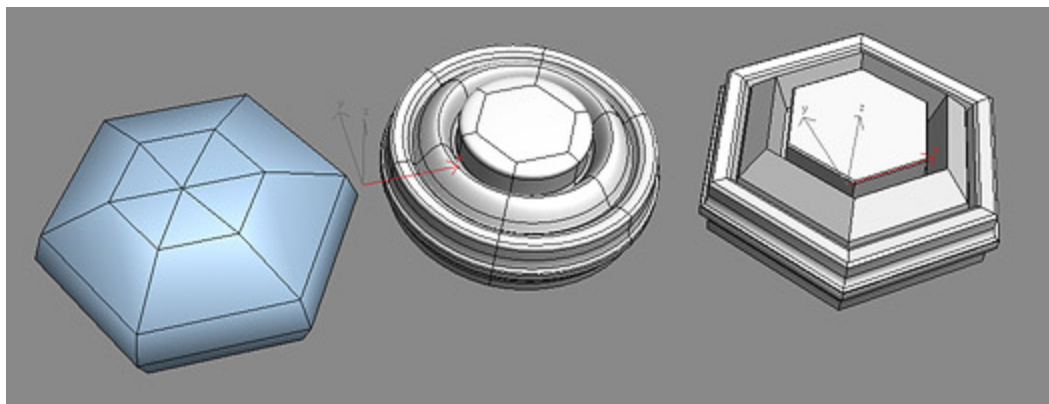
We will be creating a map showing where the object is likely to be exposed hence weathered and by contrast showing where dirt is likely to gather because of cracks being out of weathering reach.

\*Pit's and Peaks\* is a nice 3DSMax utility that generate vertex colors based on the object geometry, quickly finding height and lows points and applying them a color according to these factor.

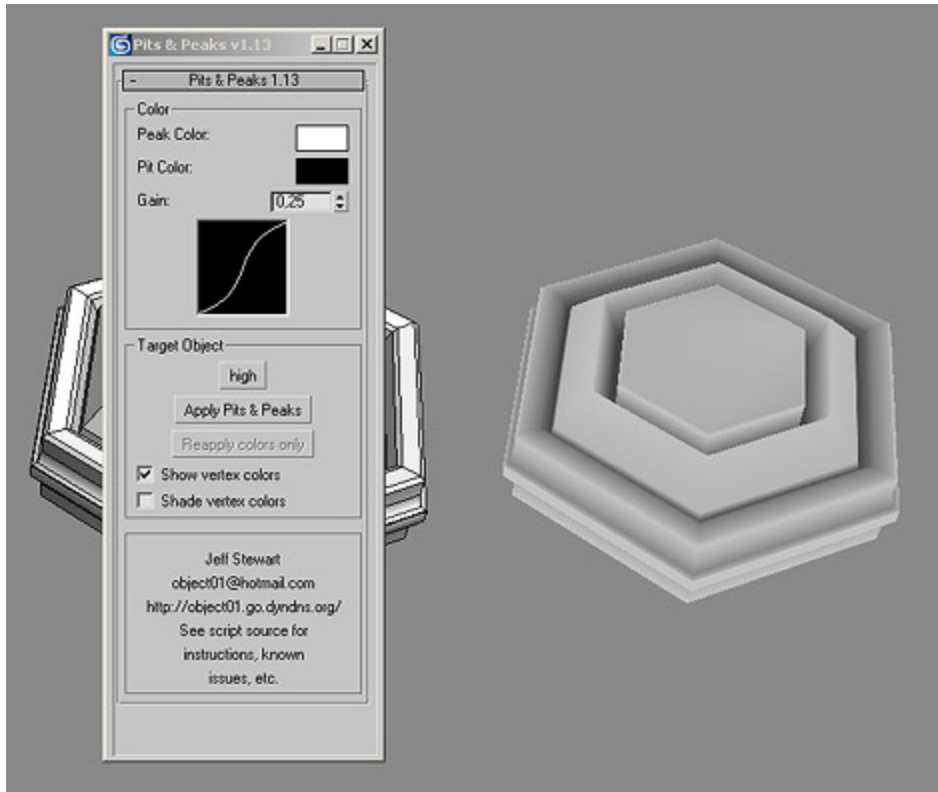
You can easily isolate exposed parts this way, hence you'll know where paint is supposed to be weathering for example. Its a nice, free and easy alternative to complex Dirt generators. We will use it to defined the pits and peaks areas of the source highpoly model, will store this information as vertexcolor and we will then transfer this onto a texture map fitting an ingame lowpoly model. The resulting greyscale map will provide a mean to easily separate dirt layers in a image editing software.

Here's how one can use it for normalmapped objects :

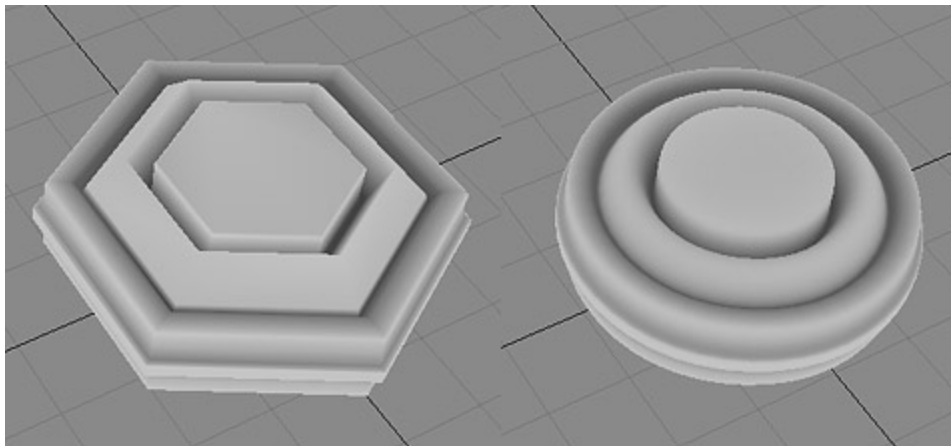
Start with a highpoly object you want to weather (middle). Be sure to have access to the smooth algorithm switch in order to be able to work on the proxy object (right). Also built a lowpoly real time object that will be used for texture baking (left).



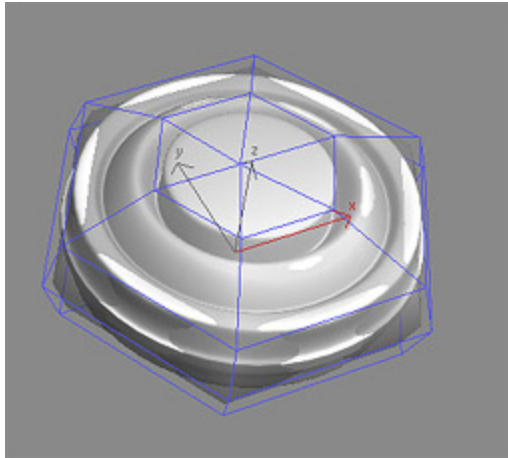
Convert the proxy cage to edit mesh as it is required by Pits'n'Peak . Run the utility.



Convert your proxy mesh back to edit poly, and switch on the smoothing.



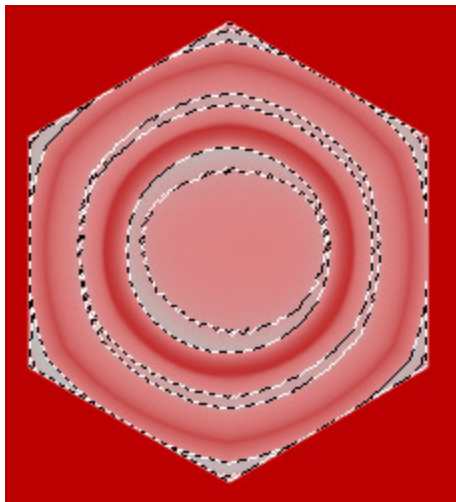
Then set up the render to texture utility so that it outputs a diffuse bake based on the real time model's UVs.



Open the diffuse bake in an image editor.



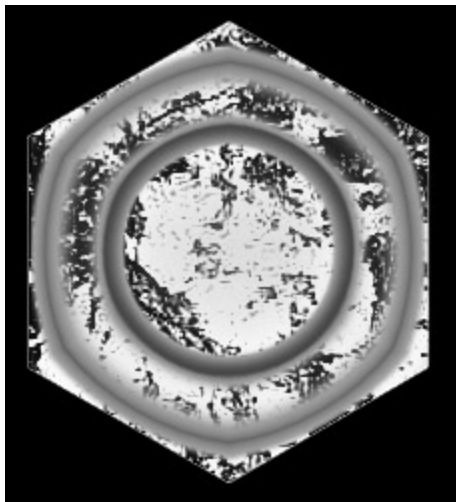
Select the brightest parts.



Open a nice dirty texture, BW it, adjust contrast to get a sharp separation between paint and underlying material. Put it on top of the baked diffuse render.



Use the selection as a mask to isolate the texture on the 'peaks' areas.



Use the result as a mask to fill create paint and worn out paint areas. Add an inner light layer style on the worn out parts, using black, small distance, and normal mode at 50% opacity or so.



Make a copy of the original PitsNPeaks render and adjust levels to get white instead of grey (if this ever makes sense!)



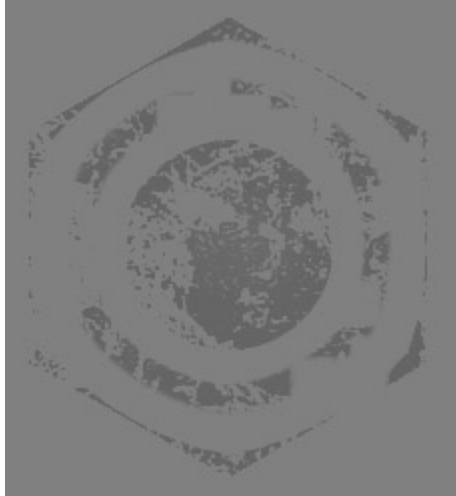
Put that in product mode to simulate dirty areas.



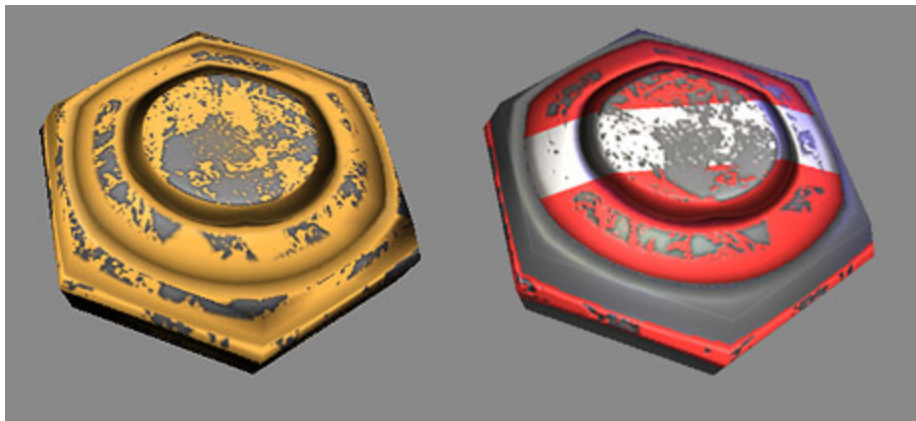
You can easily use the weather paint mask as a base to create a specmap...



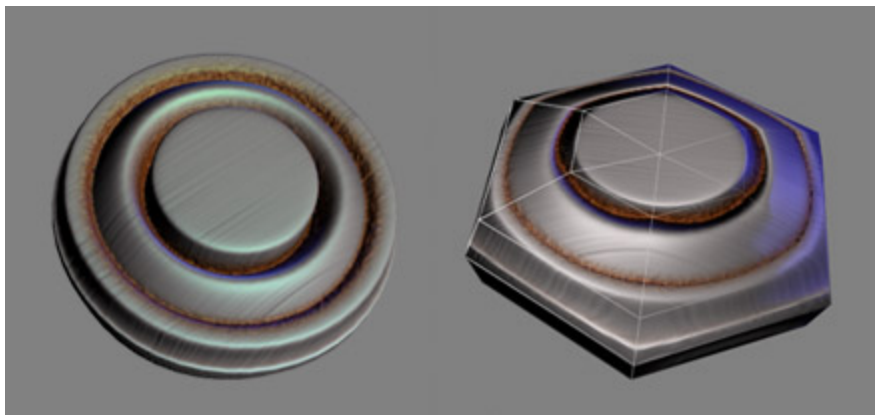
... and a bump map.



The gamerez model with normal, diffuse, and spec maps applied.



You can take the technique a step further and use the Pits'n'Peak information as a vertexcolor mask in a blend material. This allows the blending of two procedural or bitmap materials on the highpoly object based on the location where dirt may accumulate, taken from the proxy model topology.

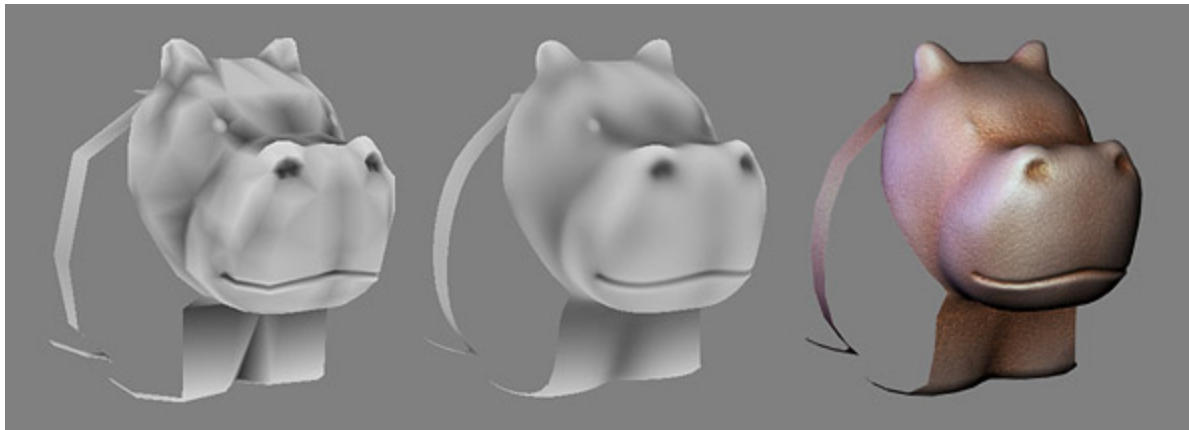


The results can be baked down to the lowpoly's UVs using render to texture, giving you a fully textured

normalmapped object with no pain and no image editing! Sharp weathered paints bits would still asks for photoshop love in order to avoid the gradient nature of the Pits'n'Peak map.



Another weathered object example with procedural dirt layers blended according to the raw Pits'n'Peak vertex color information from the unsmoothed proxy model.



Hope it was clear enough!