Toon shading in Maya

Introduction
Toon shading is the general term for flat shaded rendering, with or without a solid outline in a contrasting color. Maya’s Arnold rendering engine does not yet have a toon shader, though it is scheduled to have in the 5.5 release. In this exercise we’ll use the Maya Software engine.

Exercise

Go to Windows – Rendering Editors – Render Settings and make the Render Using option Maya Software.

Make a simple file and render it. Note that to change the background color in a render select the camera in the Outliner, go to the Shape tab in the Attribute Editor, and change it in the Environment rollout panel.

Now let’s render it using Toon shading.
First, in the Rendering environment (this tab doesn’t appear in Modeling, Rigging, Animation, or the FX environments) go to Toon – Assign Fill Shader. Choose Shaded Brightness Two Tone to start with, but experiment with the others. These are the main controls.

The most important is the ramp, to the right and halfway down this screenshot. It shows the colors in the shader with their controls. These controls are small and it’s not always easy to pick them out on a high resolution screen. The top dots represent the position of the keys that control color and the selected key has a fine white outline. Its position is noted in the Selected Position value box and can be adjusted either in the box by entering a precise value or by Control+LMB dragging. You can also drag the key directly. The Selected Color picker under the Selected Position box brings up a standard color picker for that key.

Select all the faces in Component mode and define them to have this material.

You should get a rendering something like this:
Now we need to create an outline. Again, to the Toon menu option and select Toon – Assign Outline – Assign New Toon Outline. Adjust the Line Width (you should see this in the viewport; if not, check the Display in Viewport option at the top of the panel) to get something that renders like this:

Let’s make it look more hand drawn, though. In the controls for the outline shader choose a Line Offset Map by clicking on the small checker icon to the right of the black value box.

Choose Noise. Adjust the value to find something you like and then use the small move up a level icon to return to the outline properties.

You may need to adjust the overall line width at this point.
Experiment with the Toon Fill and Toon outline to get an idea of what it can do.

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