



Take Your AutoCAD® 2013 Renderings to the Next Level

Jeff Bartels

Sr. Application Engineer – Seiler Instrument & Mfg.

Class Summary

In this class, we will go beyond the basic rendering tools and dive deeper into what AutoCAD 2013 has to offer. Incorporating some of these advanced features can significantly improve the quality of rendered images.

Learning Objectives

At the end of this class, you will be able to:

- Create custom views using cameras & targets
- Place and edit targeted light sources
- Reinforce realism using bump maps
- Clip materials using cutout images
- Work more efficiently with large renderings
- Create an animated rendering

Jeff Bartels

Background...

- Using AutoCAD professionally since Rel. 12
- Served 10 years as CAD manager
- AutoCAD instructor for nearly 15 years
- Produced 19 AutoCAD training titles for lynda.com
- AUGI member
- Sr. Application Engineer for Seiler Instrument & Mfg.



My Approach for this Session...

I will be focusing on the “need to know” features of each tool.

We will be creating renderings for several small projects

- Skills learned can easily be applied to larger projects
- Each project will reference concepts from the prior one

This class will be presented using a “training” approach

- Discussing “how” & “why”
- Student will be able to put skills to work immediately
- Don’t worry about taking notes!!

Exercise #6 – Creating an Animated Rendering

Open 06_animation.dwg

Learning goal: Animate a rendering using a moving camera and/or target.



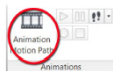
Generally speaking, an animation is nothing more than a continuous stream of still images. For this reason, animations can take days rather than hours to produce. (A one second animation may require 30 rendered images!) That being said, a well made animation is one of the best ways to truly “experience” a 3D design. In this lesson we’ll practice some animation techniques using this small scene.

Step 1. Display the camera path and target.

Turn on layer “camera-A”. This layer contains a large overhead circular path and a target located near the bowling ball. (You may have to zoom out to see the circular path.) One way to animate a scene is to sweep a camera along a path while targeting a fixed point.

Let's create a moving camera!

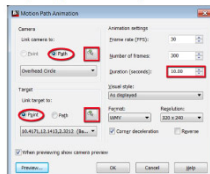
Step 2. Launch the animation tool.



This will display the Motion Path Animation dialog box. Using this box...

Select the “Path” option for the Camera. Then click the Select Objects button and select the large green circle. (Name the path “Overhead Circle”.)

Select the “Point” option for the Target. Then click the Select Objects button and use the Node object snap to select the green point in front of the bowling ball. (Name the point “Ball Front”.)



22

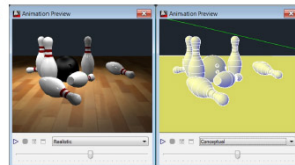
Finally, set the Duration to 10 seconds. As you can see, at 30 frames per second, this 10 second movie will need 300 rendered frames. Accept the remaining default settings and click the Preview button.

Step 3. Experiment with the Animation Preview dialog box.

The Animation Preview gives you a rough idea of what the final animation will look like.

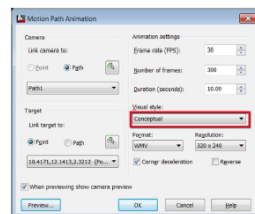
It has a familiar Play and Pause button, as well as a “scrub” bar at the bottom to move back and forth through the movie.

Using the Visual Style menu, you can change the way the model appears in the preview.



Step 4. Save the animation file.

When finished previewing the animation, press ESC (or close the preview) to return to the Motion Path Animation dialog box. From here you can make additional changes, or save the animation to one of several standard file formats.



Click OK when finished, and save the file.

The time it takes to process the movie will depend on the speed of your computer. As a courtesy, AutoCAD will display a progress bar (and the render preview) such that you can monitor the work being done. The progress bar also includes an estimated time of completion.

When the animation is finished, double-click the file to watch (and evaluate) your movie.

Since this is our first movie, let's set the Visual style to “Conceptual” so it will process quickly. (Note: You can render an animation using the same render presets used for still images with “Presentation” representing the highest quality output.)

Use the default WMV file format. This format is easily playable using Windows Media Player. AVI, MOV, and MPG are also available options.

Use the default resolution of 320x240. This will provide the fastest output. (For your next attempt, increase the resolution and see how it affects the render time.)

23

Step 5. Create an animation using a still camera and moving target.

This animation method simulates turning your head to look at your surroundings. Start by turning off layer “camera-A” and turn on layer “camera-B”. Using what you learned in the previous lesson, launch the animation tool and preview an animation using the following settings...

Select the “Point” option for the Camera. Use the Node object snap and select the magenta point located near the floor.

(Name the point “Floor”). (Note: You may have to assign the target path first!)

Select the “Path” option for the Target. Then select the magenta spline near the bowling ball. (Name the path “Pan View”.)

Assign a 15 second duration.

Preview the animation in the viewer and, if desired, create a finished movie using the quality settings of your choice.



Still images of this animation rendered at Presentation Quality.

Step 6. Create an animation with a moving camera and target.

This animation method simulates walking (or flying) through an environment. Using paths for both camera and target creates dynamic animations, and occasionally motion sickness!

Start by turning off layer “camera-A” and turn on layer “camera-C”.

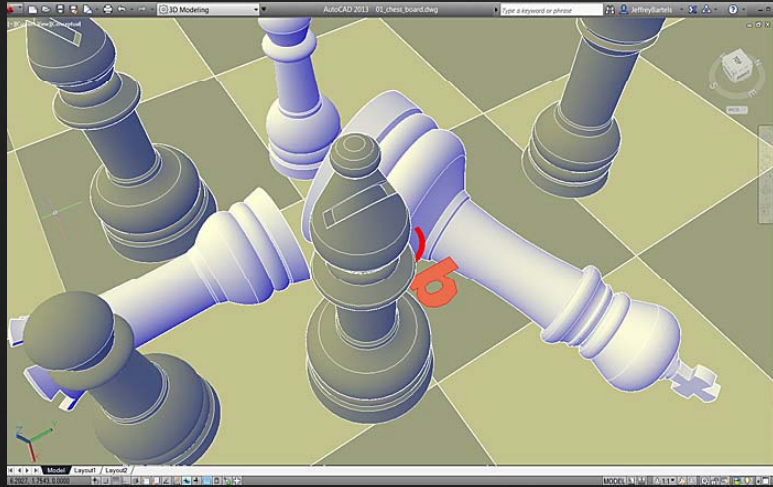
Once again, launch the animation tool and use the following settings...

Select the yellow spline as the Camera and Target path. (Assign your own path names)



24

Creating Custom Views Using Cameras & Targets



View through camera

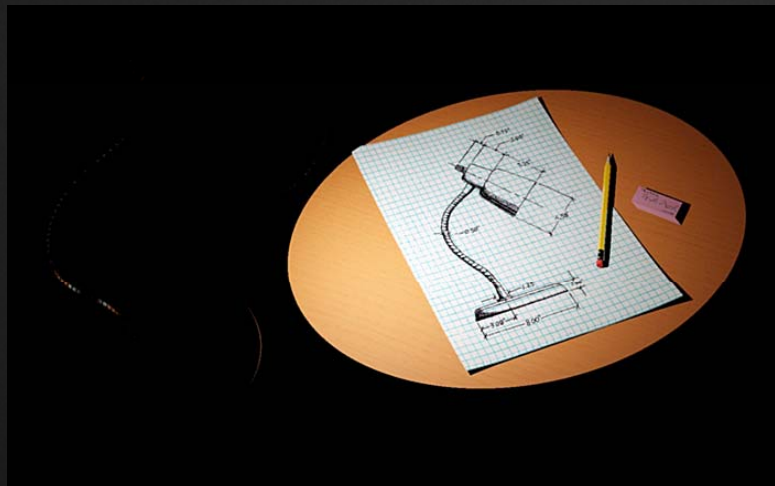


Final rendered image

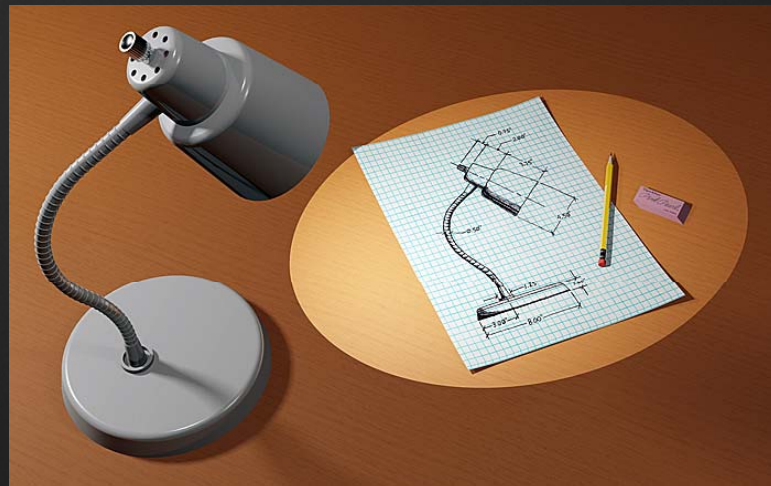
In this lesson we learned how to:

- Position a virtual camera for the purpose of rendering a drawing
- Adjust camera properties using grips or the Properties Palette
- Assign a camera view to model space

Placing and Editing Targeted Light Sources



Illumination using targeted light only



Final rendered image

In this lesson we learned how to:

- Create targeted illumination using a spotlight
- Adjust spotlight properties using grips or the Properties Palette
- Use LIGHTLIST feature to gain quick access to all lights in a drawing

Reinforcing Realism using Bump Maps



Rendered without bump maps



Final rendered image

In this lesson we learned how to:

- Simulate texture by adding a bump map to a material
- Edit bump map intensity
- Link a bump map to other image maps assigned to a material



Clipping Materials Using Cutouts



Leaf material prior to using cutout



Final rendered image

In this lesson we learned how to:

- Clip a material using a cutout image
- Predictably add, and modify several images within a single material



Working Efficiently with Large Renderings



Original state



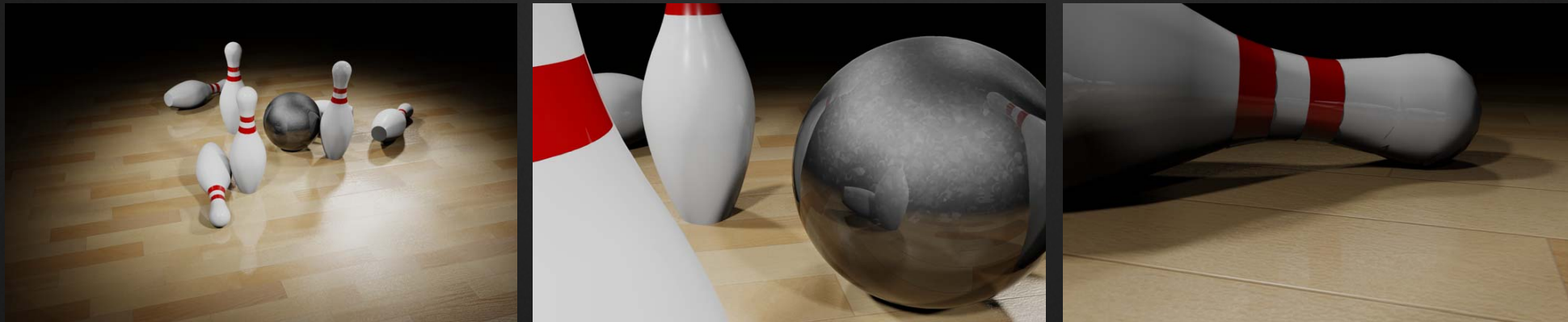
Final rendered image

In this lesson we learned how to:

- Generate faster “test” renderings by lowering resolution and/or quality settings
- Render specific regions on screen
- Render drawings to the cloud

Creating an Animated Rendering





Still images taken from “fly through” animation

In this lesson we learned how to:

- Create an animated rendering using multiple techniques
- Save an animation such that it can be played back / shared with others.

Learning Objectives

After completing this course, you can:

- Create custom views using cameras & targets
- Place and edit targeted light sources
- Reinforce realism using bump maps
- Clip materials using cutout images
- Work more efficiently with large renderings
- Create an animated rendering

Contact Information...

Jeff Bartels – jbartels@realworldcad.com

Twitter - @JeffBartels

Blog – <http://seilercadsupport.wordpress.com>

Drawings used in this presentation...

<http://tinyurl.com/AC1607JB>

