

Assignment 2: Swinging Rope

This assignment is intended to give you experience with:

- using the graph editor
- animating hierarchies
- the animation principle of overlapping action/follow-through
- rendering a movie

Your goal is to animate a natural-looking piece of rope coming to rest. One end of the rope is tacked to the wall, the other end left free to swing. The scene file you are starting with has the upper-level node of the rope hierarchy already animating. You need to animate the three children nodes to make the rope look more natural, then render out a movie.

Step 0: get everything you need to do the assignment, run Lightwave, load the scene file

- The content folder is called "assignment 02 content"
- Follow the instructions from the last assignment!

Step 1: watch the initial animation

- In the lower right corner of the interface is a button named "Preview." Click there, and move to "make preview." This will do a temporary render of each frame (NOT ray traced) so that you can watch the movie in real-time. In this case, real-time is 24 frames per second.
- Note how the "rope" looks pretty rigid. You need to make it look less rigid!
- Hit "end preview" when you're done watching.

Step 2: animate

- Hit capital-o so that you're in object-selection mode. If you hit the up or down arrows you can "walk" through the four objects that make up the rope hierarchy.
- Don't change the animation for the parent - you should only animate nodes 2, 3, and 4.
- The only channel you should change for any nodes is the rotation bank channel.
- Choose the rotation tool (y), and click on the blue circle to change the bank rotation value. If you don't see the blue circle, you'll have to hold down the Apple/Command key when you drag the mouse to change the bank. The heading and pitch channels are locked so you can't change them.
- You may want to start by setting rotation keyframes for the children nodes at the SAME FRAME where the keyframes are for the parent node. This will make them move, but it won't start looking realistic unless you overlap the motion.
- You can shift the position of a keyframe left and right on the graph editor by holding down ctrl and clicking/dragging on a key. This is an easy way to get the motions to overlap.
- Under the "channels" menu in the upper left of the graph editor is a setting called "B rots" that gives you the four bank rotation channels. The bank of the parent node is included so you can see where the keyframes are set (remember, don't change this node).
- When you rotate a node where you want it, be sure to hit enter twice to make a keyframe.
- If you want to see how your motion looks, go ahead and render another preview. DON'T TRUST the results you get when you hit the play button on the main interface! It doesn't necessarily play back the animation in real-time.
- Save your work often!!

Step 3: render your final movie

- When you like the motion you have, it's time to ray trace a movie and hand it in.
- Find the "rendering" menu in the upper left of the LW interface. Select "render options."
- Confirm that the first frame is 0, the last frame is 45, and the frame step is 1.
- Click the "output files" tab, and check the "save animation" checkbox. LW will prompt you for a filename and location. Choose a good name like "ChrisPerry.mov" and save the file somewhere easy to find (your zip disk or the desktop, for instance).
- Under the "type" menu select "QuickTime (.mov)."
- Under the "options" menu, where it says "none" select "animation." For "depth" choose "millions of colors" and for quality choose "best." Frames per second should be 24 and no other boxes should be checked. Hit OK.
- Now, go back to the rendering menu in LW proper and choose "render scene." It will ray trace your whole animation. Shouldn't take too long!
- Find your movie and double-click on it. Watch it and make sure it looks right.

Step 4: hand in the movie and the scene file

- Rename your scene file to something appropriate ("ChrisPerry.lws").
- Drop both the movie and the scene file into the hand-in folder on ash-eclass.

DUE Wednesday February 19th at the beginning of class

THIS IS A HARD ASSIGNMENT. Don't wait until the last minute to start it. Allow yourself some time to get used to the LW interface before trying to put in all of the overlapping motion.

Helpful resources:

The LW manual.

The section of the Lasseter article on follow-through and overlapping action (available in the hand-outs folder on Course Storage).

www.lightwave3d.com has a tutorial section - these might be useful guides to learning the interface (then again, they might not).

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