

Q&A

SOLUTIONS / FIXES / ADVICE



QUESTION OF
THE MONTH

Submitted by
blenderartists.org forums

BLENDER

“How do I animate a raft adrift on the surface of the ocean?”

FACTFILE

FOR

Blender 2.42a or higher

DIFFICULTY

Intermediate

TIME TAKEN

3 hours

ON THE CD

- Full-sized screenshots
- Initial and final scene files
- Scene files for intermediate steps
- Supporting image texture mask
- Finished animation

ALSO REQUIRED

Image-editing software (to create the texture mask from scratch)

This month's question is answered by **Bassam Kurdali**, a freelance animator and director. He recently directed *Elephants Dream* (<http://orange.blender.org>), the world's first open source animation

Rendering convincing water is a tricky job, but throw in animation or interaction with other objects and the task becomes exponentially more complex.

While simulation tools such as *Blender's* built-in fluid simulator can help, the bigger a simulation becomes, the more time and processing power it takes to complete. If you try to simulate on a really large scale, like an ocean, you are likely to run into long cycles of tweaking and testing.

Luckily, 3D is all about knowing how to fake effects, and *Blender* provides us with many tools to do this – even the fluid system does its own share of faking by using particle systems to create small water droplets. Instead of using a real simulation, we can use a Wave modifier to fake the motion of large waves; animated materials for the smaller waves; and careful lighting and material set-ups to improve the appearance of the water. By using a lattice for the large waves, we can tie the motion to both the surface of the water and

any objects that float on it: in this case, a raft. To do this we'll use *Blender's* modifier stack and a bit of parenting magic.

Even faking presents trade-off decisions: displacement maps look better and more realistic than bump maps, but require more geometry and longer render times. Since we're using a large surface, we'll use bump maps only. If we were only rendering a still, displacement would have been the better choice. We can also debate the use of raytracing, but for this scene, the speed hit was moderate, and the improvement to the render substantial. If you're following on a slower computer, you could experiment with raytracing turned off and a tweaked light set-up.

Finally, more effects can be added to enhance the animation: a particle system parented to the raft and animated at the right point in time gives a quick, cheap splash effect, and a soft body simulation on the flag gives the appearance of wind on the cloth. These effects are set up in the final .blend file in the CD, but space constraints prevent us from discussing them in detail.

The CD includes scene files for various stages of the walkthrough, starting with initial.blend. If you get stuck at any point, just load them in. The file final.blend contains everything needed to render both the animation on the CD and the image above.