

Studio Pro v2.5.3 PC/Mac Strata, \$1495

Summary: Studio Pro has reached maturity. The application is now stable, cross-platform, and one of the first Mac-based 3D applications that supports OpenGL. With a broad range of 3D features and strong integration with video content, the program also has a cross-platform, extensible plug-in architecture that lets Strata develop new capabilities and keep the software on the leading edge. DV#210

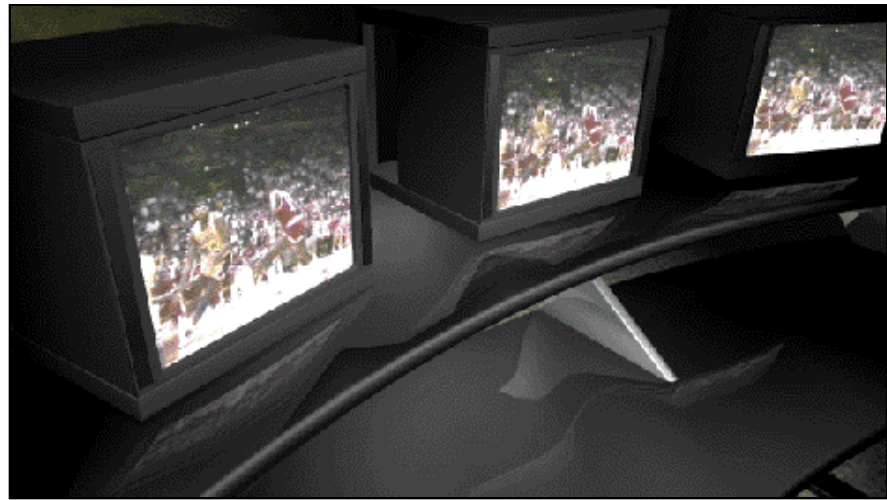
DV SCORE CARD	1	2	3	4	5	6	7	8	9	10
Features	●	●	●	●	●	●	●	●	●	●
Performance	●	●	●	●	●	●	●	●	●	●
Ease of Use	●	●	●	●	●	●	●	●	●	●
Documentation	●	●	●	●	●	●	●	●	●	●
Tech Support	●	●	●	●	●	●	●	●	●	●
Price/Perf.	●	●	●	●	●	●	●	●	●	●
Overall	7.8 Studio Pro v2.5.3									

Reviewed by Chris Manners

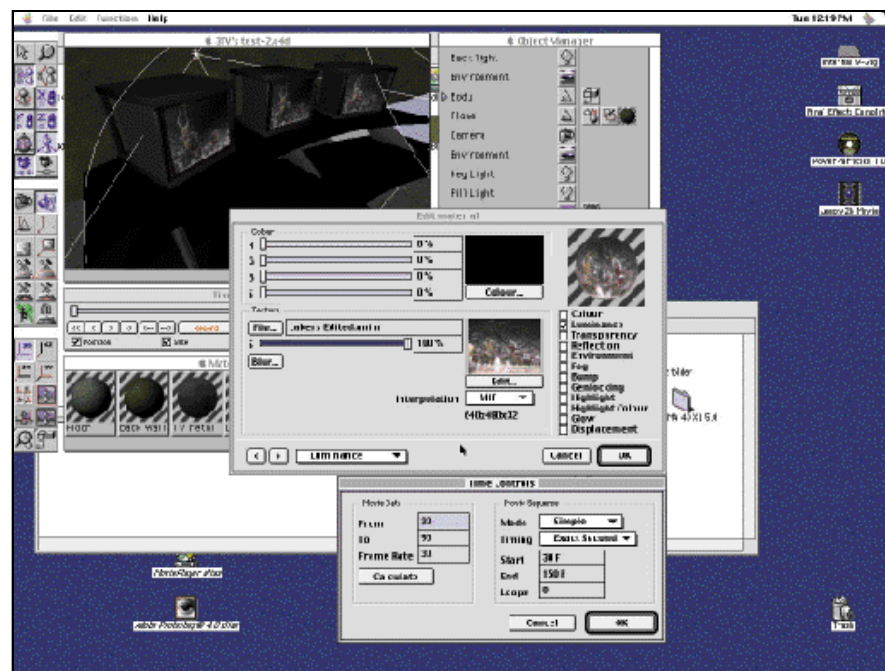
Strata Studio Pro is an old player in the 3D market, and it shows through its intuitive interface and mode of operation. After launching the program and creating a new file, you're provided with an isometric view of an empty scene, a toolbox, a menu bar with icons, and a series of floating palettes. Within these floating palettes lie textures, environmental effects, modeling extensions, and the Project window.

The keyframe-based animation timeline resides in this palette, which is perhaps the most user-friendly aspect of the program: It mimics After Effect's Project window. Tabs for each object and object group reveal shader, scale, offset, rotation, and positional information that can be altered by numeric input. By keying in values for a scene's elements, control over modeling, object orientation, and animation can be exercised. At the same time, a series of viewing options are available from this location—an icon for an eye determines whether an object is visible or not, and a lock icon can be selected next to the filename in the window. This is particularly useful when a scene becomes populated with multiple objects.

While the program provides a fairly standard set of modeling tools—including those for lathing, extrusions, mirroring, Boolean, and IK operations—what's unique about the application is its Shapes library, available from the Resources palette. Shapes work as both a method of memory management and for scene simplification by using instancing for objects that may be used multiple times in the same scene—a group of buildings in a cityscape, for example. These



Standard QuickTime movies can be applied as texture maps for a variety of surface parameters in Cinema 4D XL.



Cinema's UI with its perspective view, Object Manager, material editor, and timeline windows open. Note the icon-based tools menu on the left.

shapes can be edited separately in the main modeling window and, when saved to disk, will be updated in any scene that contains them. While the program supports a hierarchical structure for individual scenes, this feature facilitates breaking up complex projects into more manageable chunks that can be worked on separately.

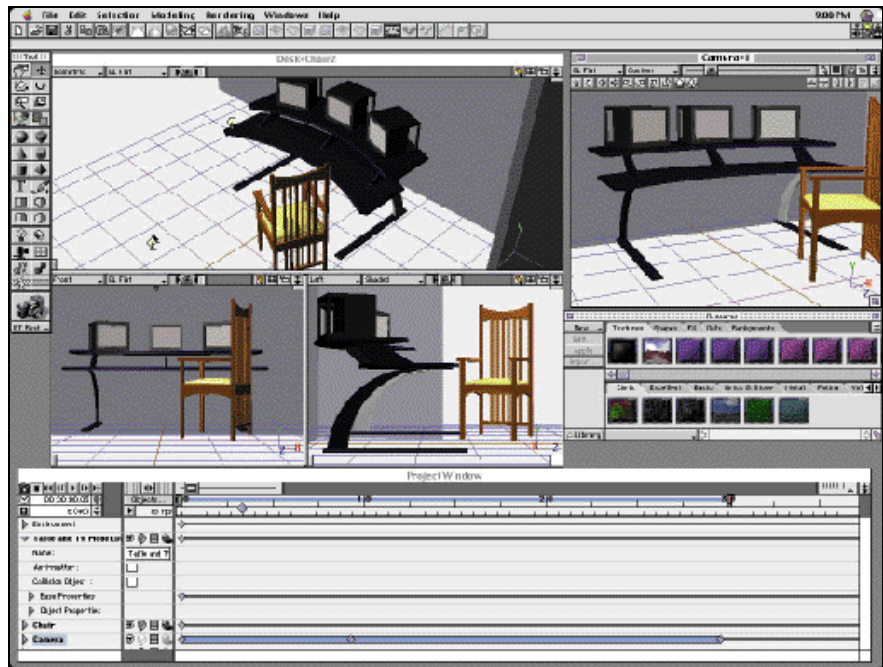
Procedural texturing and image mapping have always been Studio Pro's strengths, and this extends into the video realm because it supports the mapping of QuickTime movies onto objects or as a background. Unfortunately, limited control is available once the files have been imported. You can only determine whether the file loops—

you can't select a specific range of frames to be played or key a movie to start playing at a specific time in an animation. Cropping out edge garbage can only be achieved by increasing the size of the movie texture's coverage, which pushes the garbage outside the texture's viewable area. Studio Pro allows a custom frame rate to be set for video input and will recognize the specific frame rate of any movie you import. The program handles interlaced footage just like it does any other file—there's no de-interlace feature. On output, though, Studio Pro does a handy job of interlacing files. There's a Field Render checkbox in the Render menu that allows upper- or lower-field dominance to be selected. ➤

Studio Pro supports output at 29.97fps, but achieving this proved something of a challenge. Despite selecting all of the appropriate options for 29.97 output, three-second animations unfailingly produced a file with exactly 2700 frames. In some ways, though, this is beside the point—3D animations are more frequently produced at 30 or 60fps and then conformed in an output-to-tape application. The package supports a variety of common pixel aspect ratios, but doesn't include Title Safe and Action Safe modes, which leaves Studio Pro with a somewhat patchy approach to video integration. It has field of view and depth of field tools for matching video, but no way to be absolutely sure that your composited object will be in the right place onscreen at all times. In terms of integration with video, however, it's in the audio space that Studio Pro is really lacking: There's no way to bring an audio track into the program to sync up with an animation. This makes character voice sync particularly difficult despite the program's fairly robust IK features—it's not possible to animate to an audio track.

Studio Pro has recently developed into an application that can accept plug-ins. The company has been developing additional functionality for the program and releasing these updates on a frequent schedule. Of recent interest is the release of Power Modules II, a set of textures, some of which aren't pre-animated. Textures can be animated to create stunning moving texture maps by moving the marker in the project timeline to an appropriate spot and creating a keyframe by selecting the At Current Time radio dialog in the Textures palette. One particularly useful feature is the ability to apply multiple textures with varying opacities and motion paths to a single object. Setting two semitransparent textures to travel in opposite directions is a powerful way to create animated textures that simulate water, for example.

Despite lacking a few high-end features for integration with video, Studio Pro holds up well. In terms of rendering quality, the programs' scanline rendering supports soft shadows, and the raytracing mode produces excellent high-quality images, especially for print (albeit not quite as quickly as some of the competition). One useful addition to the sturdy rendering engine would be better compositing through enabling multipass rendering. The program comes with an application called RenderPro, which allows scenes to be rendered on other machines across a network and features a batch rendering mode. Coupled with drag-and-drop lens flares, auras, fire, and smoke effects, these options round out Studio Pro's extensive feature set.



Strata Studio Pro's workspace with various shaded wireframe views, resources file manager, and timeline windows open.



A Strata Studio Pro render of our reference scene, with a chair added. Note soft shadows and reflections produced by its scanline renderer.

If you're looking for a robust modeling, animation, and rendering package to integrate with your video tools, this relatively intuitive package may be exactly what you need.

LightWave 3D v5.6 PC/Mac/UNIX NewTek, \$1995

Summary: LightWave is a capable 3D modeling, animation, and rendering tool originally developed as an adjunct to the Video Toaster.

The current 5.6 version runs on a wide variety of platforms. With its exceptional modeling tools, character animation capabilities, and its ability to use spotlights as image projectors and video as a texture map, it dominates the broadcast post-production market. DV#211

*Reviewed by Lachlan Westfall
and Chris Manners*

LightWave consists of two modules—Modeler and Layout. Objects are built ➤

DV SCORE CARD	1	2	3	4	5	6	7	8	9	10
Features	●	●	●	●	●	●	●	●	●	●
Performance	●	●	●	●	●	●	●	●	●	●
Ease of Use	●	●	●	●	●	●	●	●	●	●
Documentation	●	●	●	●	●	●	●	●	●	●
Tech Support	●	●	●	●	●	●	●	●	●	●
Price/Perf.	●	●	●	●	●	●	●	●	●	●
Overall	8.2 LightWave 3D v5.6									

in Modeler, saved, then loaded in Layout, where they can be animated. The program is keyframe-based and includes a number of features—such as Inverse Kinematics, morphing, and MetaNurbs—that make character creation and animation one of LightWave's strong suits.

Lightwave was originally an Amiga program (and the first 3D program to run

under NT), but it currently runs on virtually every computer platform imaginable. Its heritage shows in its look, feel, and overall unique layout. And while this could pose challenges to those coming to LightWave from other 3D tools, its renderer is first rate.

Although LightWave is able to output animations as QuickTime movies, you can't use .mov files as texture maps. You'll need to convert your video to a series of Targa files. Images and image sequences for use as textures or as a backplate are loaded into LightWave via the Image Panel, where their playback parameters can be set.

LightWave 3D is one of two products reviewed here that can handle incoming interlaced video. The Interlaced button in the Image Panel allows image sequences from interlaced footage to be treated as

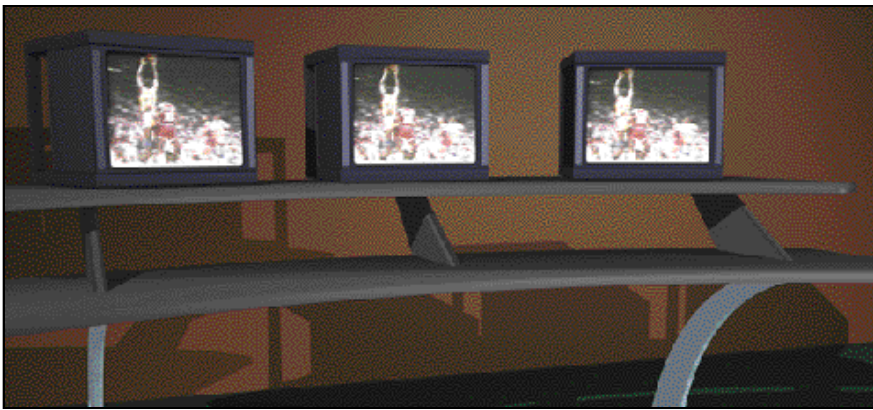
discrete fields when applied in an animation that utilizes field rendering.

Via the Image Panel, you're able to set the sequence to loop, specify a start frame for the sequence, and set the length of the loop. The Frame Offset dialog lets you determine which frame to start the sequence from, while Sequence Loop Length lets you determine how many frames to play before looping. Unlike most of the other programs reviewed here, there's no way to set the speed at which the sequence plays back.

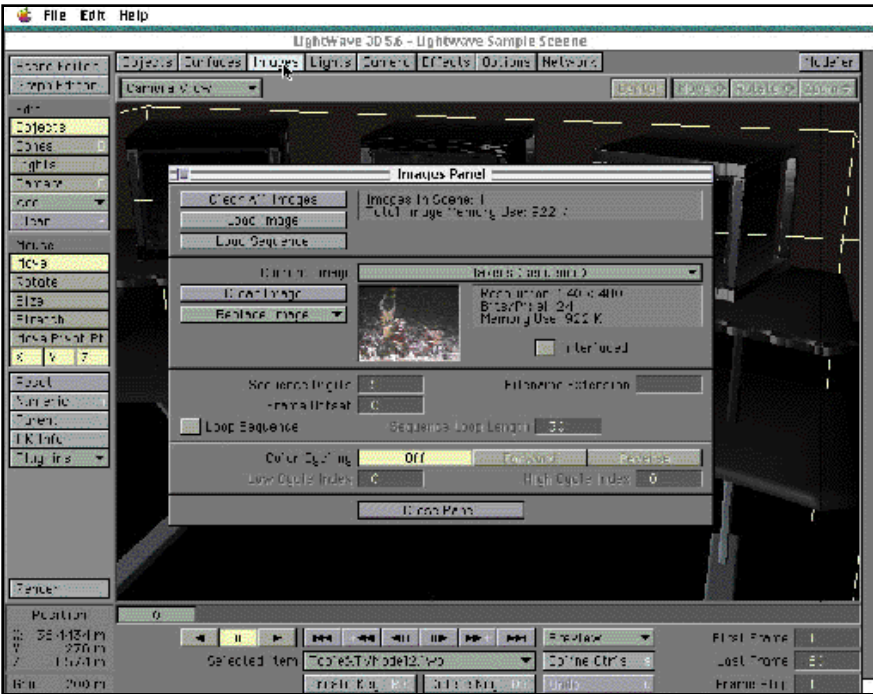
Like the other programs, LightWave allows you to field-render your output and to reverse fields if necessary—although it doesn't actually tell you which field is first. LightWave 3D's lens flares, physically accurate depth-of-field, time-based motion blur, as well as a wide variety of camera lens selections (in order to match phenomena created with these lens types), are quite helpful for integrating 3D objects and video. LightWave uses front-projection mapping for seamless 3D compositing with background plates, which allows 3D objects to interact with 2D background video. In addition, the support for external Photoshop plug-ins is useful in some situations. However, the lack of audio support and inability to work internally at 29.97fps make syncing a character to an existing soundtrack, as well as outputting a finished video with audio, problematic.

As we were finishing this review, NewTek announced Frame Factory, a \$3995 hardware/software solution comprised of an ITU-R-601 video I/O board, LightWave 3D, and Aura. It was designed to capture single streams of D-1 video and accelerate the video capabilities of LightWave 3D and Aura, NewTek's video paint, animation, and rotoscoping tool.

In summary, LightWave offers a range of features designed for integrating 3D and video. Its ability to project images and video from spotlights is unique and its MetaNURBS modeling functions make creating characters a snap. I found its operating paradigm more difficult to learn than those of the other programs tested here, but I've seen some great work created in LightWave. It continues to be the choice of many animation professionals.



LightWave outputs field renders and lets you reverse fields if necessary, though it doesn't actually tell you which field is first.



LightWave 3D's Images panel handles image sequences. It's the only app we looked at that natively supports de-interlacing.