

Score: 3.0

## Pros

Appropriate for short-sequence touch-up. Particularly useful for rotoscoping. Inexpensive.

## Cons

Big and complicated projects become unwieldy. After each change, all realtime frames must be re-rendered.

## Bottom Line

Inexpensive rotoscoping product that needs lots of RAM.

## System Requirements:

### Mac

Power Mac with G3 or 604 processor; 128MB RAM minimum; 24-bit video display; Mac OS 8.5 or later; QuickTime 3.0 or later.

BY CHRIS MANNERS

# RotoDV

- Digital Origin, \$399 (DV#209)
- Rotoscoping, Video Painting, and Effects Software for the Mac



Digital Origin's RotoDV application is a rotoscoping, video painting, and effects program designed for use by video artists who want to interact directly with their video. Its RAM-based preview lets you load a number of frames into a realtime playback mode, where they can be manipulated in a variety of ways. The program supports Wacom-compatible drawing tablets.

Typically, a new project will begin with selecting a frame size and importing a video clip. Although it's possible to begin painting immediately without pulling in video, most projects will require some source footage. When you import footage, a Clip Options dialog box opens where you

set the in and out points of the frames to be manipulated and determine which set of frames are loaded into RAM for realtime playback.

In most cases, it makes sense to limit the number of realtime frames loaded into RAM to the exact section of the video you want to work on. One way to do this is to export the specific frames you want from another video application. You don't want your system to be bogged down by handling additional frames you don't need to work on.

## Layers and stacks

RotoDV uses a layer metaphor called "stacks"

In this screenshot, the Media and Blend Stacks are expanded in the Timeline window.

The Transport for realtime playback is visible in the upper right corner, and the Brushes and Clone palettes are open.

to work with clips. The program contains two types of stacks—a Media Stack, which contains all the video and paint layers, and a Blend Stack, which determines how the layers interact with each other. Both these Layer stacks reside in the Timeline window. When you start a ▶

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new project, a default paint layer resides in the Media Stack. Once you import a clip, it appears as a video layer in the Media Stack. The program supports multiple layers: It's possible to import as many clips and create as many paint layers as your RAM allows.

The simplest of projects can consist of two layers in the Media Stack—an underlying video layer and a paint layer. You can't paint directly on a video layer without transforming it into a paint layer first, but it's better to paint on a separate layer so that you can erase mistakes and tweak the paint settings without affecting the source video. The Timeline window gets complicated when you start to look at the Blend Stacks, which reside above the Media Stack in the palette.

The Blend Stack determines how the layers interact with each other in a standard manner. The transfer modes are similar to those in Photoshop and After Effects, including all the usual blending options (add, dissolve, multiply, subtract, screen, difference, soft light, hard light, luminance, hue, and so forth). The order of the layers in the Blend Stack doesn't have to have any relation to the order of the Media Stack. In fact, it's this stack that you'll want to view when working on a project, once you've decided how the layers should interact with each other.

The Timeline palette is where RotoDV has some problems because it provides three types of functionality in one place. You can scrub through your project, look at the Media Stack (which functions more like a clip bin), and determine your transfer modes through the Blend Stack. I don't like the combination of three concepts in one location—the program

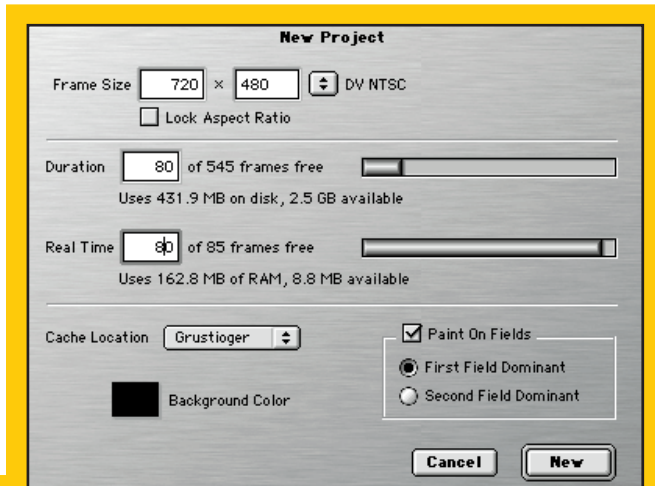
would be simpler if the Media Stack was broken out of this palette and a separate location was created for assets.

## Brushes, cloning, and effects

The tools the program provides to paint on video are standard and easily recognizable. The Toolbox contains marquee, pointer, and lasso selection tools, and the paint tools reside in this palette. By accessing the paintbrush, a series of options for brush type can be selected, including an airbrush, chalk, pen, watercolor, and the program's special effects. All brushes

are editable and can be saved in sets after new brushes have been created. The Brush Options palette determines the stroke characteristics and has a series of sliders

for opacity, blend mode, spacing, fade in/out, bleed, and resaturation. At the bottom of this palette, though, the true power tools are in the links drawer. ▶

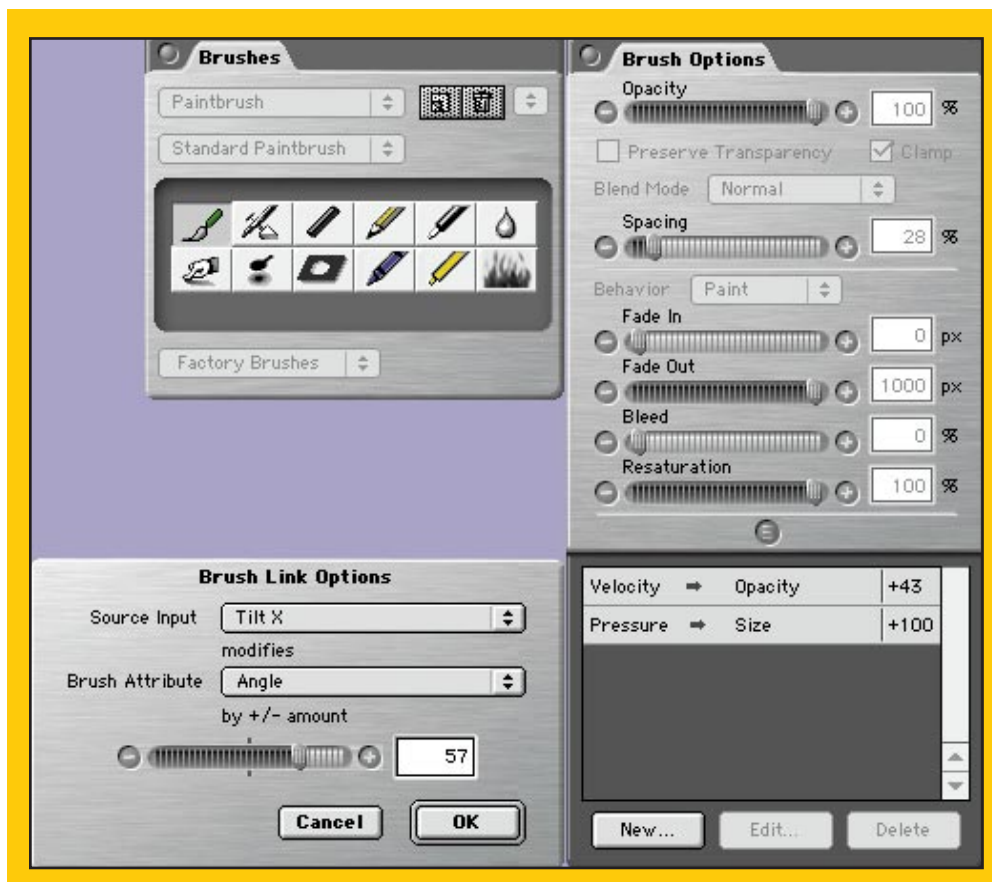


These dialog boxes are for beginning a new project (upper) and for importing a clip (lower). In the new project dialog, you set the frame size, the duration of the entire project and the quantity of frames to be loaded in to RAM for realtime playback. It's also possible to set the option to paint on fields. In the clip options dialog, in and out points are set, as well as alpha channel information.

modes—the program has to render every frame in your realtime cache. It would be nice to have a quick preview mode that shows changes in blending modes in only a single frame, then lets you choose whether to apply that choice. In fact, the first frame renders almost immediately, so it can be arduous waiting for a series of frames to render when you already know you don't like the effect. Although the program supports high-end features such as painting on fields and alpha channel support, it can't work with nonsquare pixels and lacks audio support. More important, RotoDV can start to choke and slow down dramatically when multiple sources are brought into the application.

RotoDV works best for frame-by-frame rotoscoping; and to liven up a somewhat less-than-exciting task, the program has features such as painting and cloning. But these capabilities aren't quite ready for desktop systems yet, unless you have a very small project, lots of RAM, and a screamingly fast CPU. Even on a 450MHz blue G3, the application can become a little unresponsive. Nonetheless, no one has produced a video program yet that's a combination of Painter and Premiere—RotoDV is a solid first step towards creating that killer application. If you need an inexpensive rotoscoping tool on the Mac, I highly recommend the program. In the meantime, RotoDV bears scrutiny: As faster CPUs are introduced and RAM continues to fall in price, the program will certainly become more viable for realtime painting. ■

**Chris Manners** is the digital media manager for Miller Freeman's Visual Communications Group. ►



Selecting the small circular button at the foot of the Brush Options dialog opens the Brush Links palette. The New button opens the Brush Links Options dialog, where pulldown menus allow attributes such as pressure to be linked to size. Users with a Wacom-compatible tablet will benefit the most from this feature.

These link settings allow for the linking data such as stylus velocity to opacity. Other attributes that can be linked to brush values include direction, pressure, Tilt X and Y, and random modulation and density. The target values, on the other hand, can be linked to paint attributes such as hues, brush attributes such as angle, and stroke options

such as opacity and bleed. What this means is that it's possible to set up custom brushes and then save them out in sets. In fact, looking at the links for the effects brushes and modifying them is a good way to start creating your own custom brushes.

Once you are painting on a paint layer, the program has a number of features and modes of operation. You can simply paint on a frame, use the Transport to move forward, and paint on the next frame. Alternatively, you can set a slow playback rate, click the record button, and paint on your clip in realtime. AutoPaint is a particularly useful feature because it carries the paint from one frame into the next—handy for paint that gets increasingly larger. Together with an onion-skinning feature called Lightbox that allows you see a ghost image of the previous frame as you move forward, these

capabilities allow for fairly robust painting capabilities.

Apart from the paint and brush tools, the program supports cloning from one layer to another. Clicking on the Sheep icon (for cloning Dolly, of course) at the bottom of the Toolbox provides a simple selection tool to pick the target area in the source frame. After specifying the target location in the working layer, it's possible to offset the clone by a number of frames or lock it to cloning from one single frame throughout the duration of the project. This feature can create pretty spectacular effects as materials such as a water spray can be cloned from one clip onto another.

## Conclusion

RotoDV is an impressive first release, but it isn't without flaws. A certain slowdown to workflow happens when you want to change blending