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Animate Time

Speed ramping footage for intense special effects.

Perhaps you remember the impact of *The Matrix*; nearly a decade ago, that movie started a number of trends, among them one that is still seen in recent features such as *300*: effective storytelling with footage shot at high speed often means ramping the playback speed, animating time itself. Adobe After Effects was built to do just that, and no production using high-speed footage should be without this option.



by Mark Christiansen

In a speed ramp, time itself is animated;

typically the footage slows down at key moments. This turns slow motion from a pretty effect to a dramatic device, as some of the most intense moments of life – be it a car crash or the winning goal – can leave the memory that time actually slowed down as it occurred.

This example is made up of three clips from the *Ultra Water 2* collection, as well as a short 20 second soundtrack roughed out with *Sonicfire Pro* using material from the *SmartSound Ethereal Dreams* collection (all available from *Artbeats*). *Sonicfire* lets you take modular pieces of music and assemble them any way you like; I designed the soundtrack to have three flourishes where the speed changes are to occur, and so the next task is to edit the timing to the soundtrack.

I create a new composition (*command/ctrl + N*), and in *Composition Settings* choose the *HDTV 1080 24* preset and a duration of 1:00:00 (type 10000 in the duration field). This is much longer than the audio clip, which I now add to the comp, but it allows room for the longer clips.

Twirling down the audio layer settings in the *Timeline*, then *Audio*, and finally *Waveform*, I am able to see where the flourishes occur in the music; they are the widest (or loudest) points in the waveform (*FIGURE A*). I add a marker for each of these using the * key (with the layer selected) and can then twirl the controls up again.

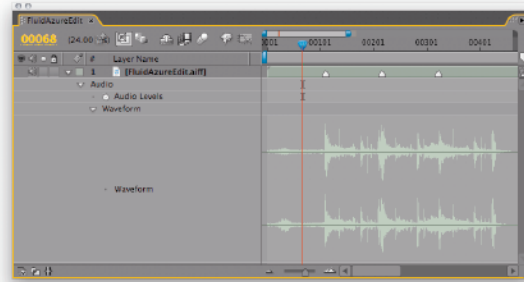


Figure A

Now I add the first video clip to be retimed, *UM207* from the *Ultra Motion 2* collection, a close-up of a woman plunging into a pool shot at 1000 fps but set as a 29.97 fps clip. After Effects allows you to freely mix footage of varying frame rates, and to alter it as you see fit.

You may not realize that you can change the frame rate of incoming *QuickTime* movies; in this case, selecting the clip and opening the *Interpret Footage* settings (*command/ctrl + F*), I conform the frame rate to 24 frames per second. Because the actual frame rate of the footage is not 29.97 but 1000, I conform it to the target 24 fps so that I don't have to retime it for smooth slow-motion playback.

The other helpful adjustment for 24 fps footage is to switch the project to display in frames instead of timecode in *Project*

Settings (*ctrl+alt+shift/command+option+shift + K*). This also makes it easier to understand how the retimed footage actually works.

Back in the comp, I enable time remapping for 207H (*ctrl+alt/command+option + T*). With the *Current Time Indicator* (or *CTI*, also known as the *playhead*) at frame 96, about 15 frames before the first audio marker, I slide the whole 207H layer so that the (*shift = F9*) visible *Remap* keyframes, by sliding the whole layer the number changes to 190. I add a *Time Remap* keyframe here.

Now I scrub forward to find a frame where the swimmer's head enters the water – around frame 295. I add a keyframe here. Moving the *CTI* back to that first audio marker (you can hold the *shift* key to snap to it), I *shift* select the final *Time Remap* keyframe and drag the keyframe at 295 to the current time (again, holding *shift* to snap).

To see what just happened, enable the *Graph Editor*. You should see the graph for *Time Remap*; if not, choose *Show Selected Properties* under the icon that looks like an eye. In the next menu over, choose *Show Reference Graph* so both the *Speed* and *Value* graphs are displayed (*FIGURE B*). This is a lot like the type of

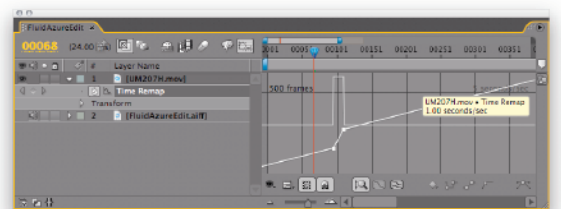


Figure B

