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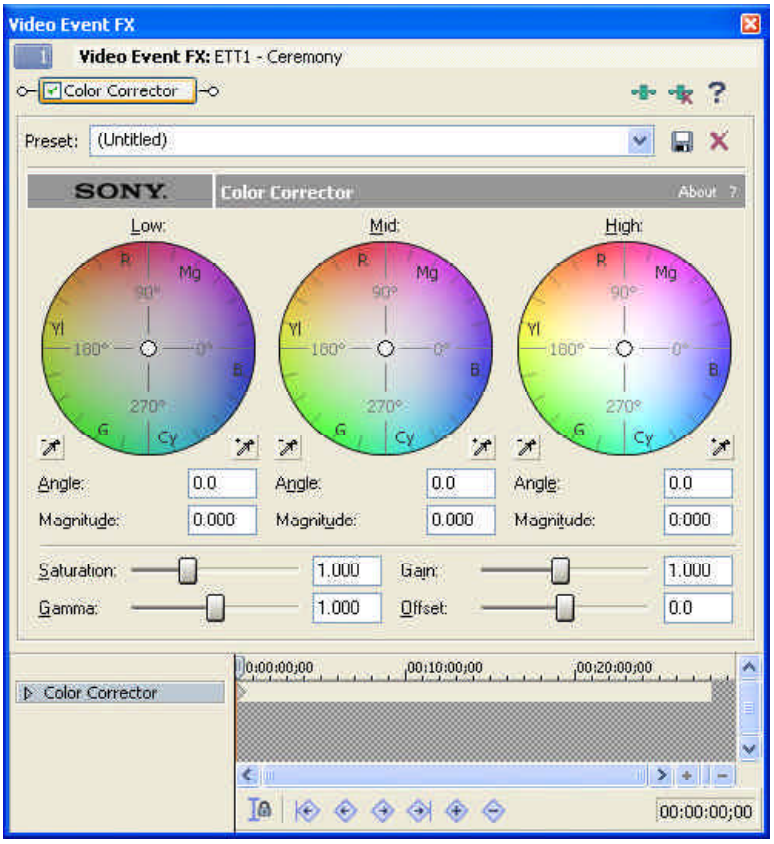
Vegas + DVD Tips, Tricks, and Scripts

Learning and using Vegas and DVD Architect

Color Balance

By Leo Staggs

Different lighting conditions change the appearance of colors in your video. The human brain knows what color certain things should be, and it automatically compensates for changing lighting conditions. For example, a tungsten light will cast a blue hue, whereas a fluorescent light casts a yellow hue, yet we will always see white as white, never as blue or yellow. Cameras, though, are not so clever. To ensure there are minimal color variations when lighting conditions change between scenes, you need to adjust the **white balance** on your camera.



Although virtually all consumer grade video cameras are equipped with an auto-white balance, it can be easily fooled, and should never be relied upon. Instead you should use the manual white balance control. However, it's easy to forget to set the white balance, and that will result in footage with varying color casts from one shot to the next.

Vegas is equipped with a plug-in that can help restore your video: the **Sony Color Corrector**. When you open this plug-in you see three color wheels –

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Lows (shadows), **Mid** (mid-tones), and **High** (highlights):

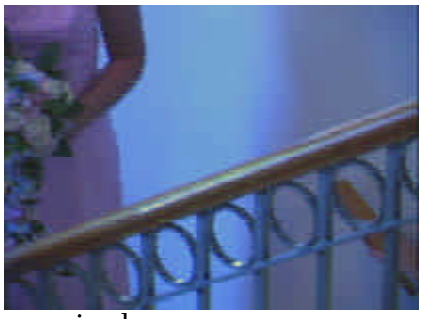
Consider this still taken from some DV footage. The white balance was set for recording indoors but a small section was shot near a glass door letting in sunlight. The scene therefore has a blue/gray cast to it:

To correct the color balance using Vegas you need to tell the Color Corrector plug-in what color the highlights, mid-tones, and shadows are. To do this, you click the Complimentary Color Tool – the eyedropper with the minus sign at the bottom left of each color wheel – then select an appropriate region of the scene. When selecting a color you may either click the eyedropper once to select a single color, or click and drag over a range of tones.

What you are actually doing is telling the Color Corrector to neutralize the selected color or tones by increasing the amount of the complimentary color in the scene. The scene in this example is blue, so the color corrector will increase the amount of red.

Should highs, mids, or lows be corrected first? I have tried various combinations and found very little difference between the end results. However, as it is the highlights that generally make the greatest contribution to the overall color, it makes sense to correct the highlights first.

In this example, the highlights were corrected by selecting an area that should be white. This resulted in a slightly redder picture that made skin tones look more natural, but a blue haze remained:



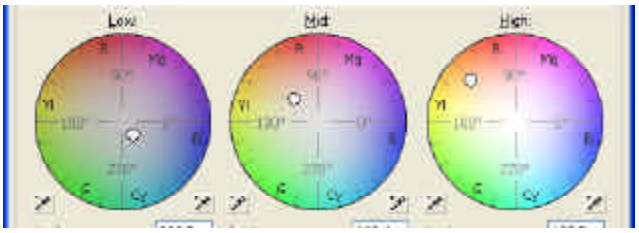
The mid-tones were corrected by selecting an area that should be grayish. This brought the scene to life once again, adding both color and depth.

Finally, the shadows were corrected by selecting an area that should be black or dark gray. This made no perceptible difference to the color, although a very small amount of red was removed, judging from the

color wheels:

Notice that when making the color correction, the white center point of each wheel moves to indicate how the color has been balanced. If you make a mistake during the correction, double-click the circle and the color will be reset to its original state.

Color correction does an excellent job of removing unwanted color casts, but it is far from perfect, and nothing beats setting the white balance correctly. Just as you should not rely on your camera's automatic white balance function, do not rely on color correction to make bad color good. It can only make bad color less bad but could very well save that shot you thought was unusable.



Beginner's Corner - Envelopes

By Edward Troxel

There are many envelopes that can be added to tracks, events, and even transitions in Vegas. While each type of envelope can only be added at specific locations, they all perform useful purposes. Let's look at many of these envelopes, see where they're applied, and see what they do.

Right-click any video track (a blank area of the track or the track header), choose "Insert/Remove Envelope", and you'll see three options. The ***Composite Envelope*** will let you change opacity levels of the video track over time. This is exactly the same as the "Levels" slider on the track header but can change over time. Interestingly, you can actually use the Levels slider to add nodes to the Composite Envelope and change the opacity over time using the automation controls. The automation controls can be used on many envelopes and should be explored.

The ***Mute Envelope*** also affects opacity. When you add a new node, there are two options: Fully visible or Muted. If you're only looking for an on/off switch, the Mute Envelope can be useful. Otherwise, the Composite Envelope would be preferred. One nice thing about the Mute Envelope is that it only requires a single node to change from on to off or change from off to on.

The ***Fade To Color Envelope*** will let you go between "No Color" (which shows the video as-is), up to the "Top Color" by sliding the node up or down to the "Bottom Color" by sliding the node down. The Top and Bottom colors are set by right-clicking the track header, choosing Fade Color, and then picking Top or Bottom where you can then pick your desired color.

Right-click on any audio track (a blank area of the track or the track header), choose "Insert/Remove Envelope", and you'll see four options. The ***FX Automation*** option will allow varying the track FX over time. When you click on it, a dialog will open allowing you to choose which FX you wish modified over time and the actual parameter you want adjusted.

The ***Volume Envelope*** will let you change the volume of that track over time. This is the same as the "Volume" slider on the track header but can vary over time. This will be added to any track level adjustments and can adjust volume anywhere from off to +6 dB.

The ***Mute Envelope*** also affects volume. When you add a new node, there are two options: On or Off. Once again, this is fine if you're only looking for an on/off switch. However, I prefer using the Volume Envelope for more flexibility.

The ***Pan Envelope*** will allow dynamically panning the sound from left to right. Once again, this is the

same as the "Pan" slider on the track header but can vary the pan status over time.

When you right-click a video event and choose "Insert/Remove Envelope", you get the option of adding a Velocity Envelope. The ***Velocity Envelope*** will let you adjust the speed of a clip anywhere from 300% (triple speed) to 100% (normal speed), through 0% (freeze frame) down to -100% (full speed reversed). For reversed footage, I typically just right-click the event and choose "Reverse" but the Velocity Envelope can be used for this purpose as well. It should also be noted that there is no corresponding velocity envelope for audio.

If you have added a transition (not just a crossfade created by overlapping two clips), you can right-click the transition and add a Transition Envelope. A ***Transition Envelope*** will let you vary how far the transition as proceeded over time. For example, suppose you have a 5 second transition, you wish it to proceed to the 30% point in the first second, hold at 30% for 3 seconds, and then finish in the last second, that can be accomplished using the Transition Envelope. This envelope even allows making a transition go backwards!

Bus tracks can also have envelope. The Audio Bus tracks can have a ***Volume Envelope***, ***Mute Envelope***, and ***Pan Envelope***. These behave the same as their namesakes on the standard audio tracks.

The Video Bus track can also have a ***Mute Envelope*** and ***Fade To Color Envelope*** which both behave the same as on a video track. However, two additional envelopes are available on the Video Bus.

The ***Motion Blur Envelope*** will help make computer-generated animations look more realistic. For example, if you use track motion or event pan/crop to move a clip across the frame, each frame is displayed clearly when no motion blur is applied. Turning on motion blur adds a motion-dependent blur to each frame to create the appearance of smooth motion in the same way a fast-moving subject is blurred when you take a photograph with a slow shutter speed.

The ***Video Supersampling Envelope*** will improve the appearance of computer-generated animation by calculating intermediate frames between the project's frame rate, allowing you to create smoother motion blurring. The effect of video supersampling is less apparent with video that contains fast motion, and supersampling cannot improve the appearance of existing video.

Different envelopes appear as different colors. You can also adjust the color of each envelope. Go to Options - Preferences to the Display tab. From there you can choose each envelope type and specify what color will be used for that envelope.

Once an envelope has been added, no effect will be seen until the value of the envelope is changed. By default, one node will exist at the very beginning of the envelope. Adding additional nodes as needed will allow varying the value over time. There are several ways a new node may be added. For example, you can right-click the envelope and choose "Add Point". A quicker way is to simply double-click the envelope.

The new node can then be adjusted as needed. Move the node up or down to change the value at that point and time. Move the node left or right to change when that value will take effect.

Sometimes you may wish to change the value of a node but do not wish the time to change. If you hold down the CTRL key while adjusting the node, it will only move up or down eliminating any risk of it changing time.It will also let you change the value in very small increments.

If you wish to change the time of a node without risking changing the value, hold down the ALT key. Any adjustments with the alt key pressed will only move left or right. If you hold down both CTRL and ALT, once again it will only move up and down but will move freely unlike when only CTRL is pressed.

Finally, press SHIFT and you can "draw" on an envelope placing many nodes across time quickly and easily. Experiment with envelopes and you'll see that they can add incredible power to your editing.

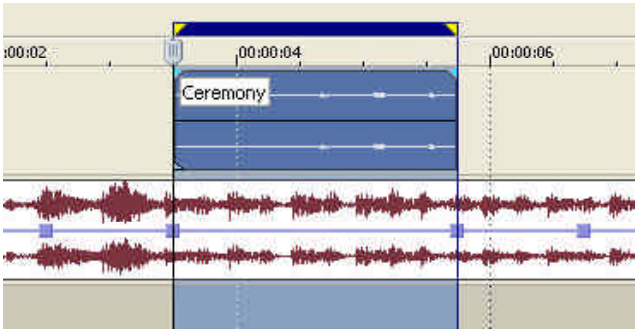
Scripting - Four Points on Envelopes

By Edward Troxel

One task frequently required while editing is temporarily changing volume. For example, when talking begins, any background music volume should be decreased. Similarly, when the talking ends, the volume should be increased back to the original volume.

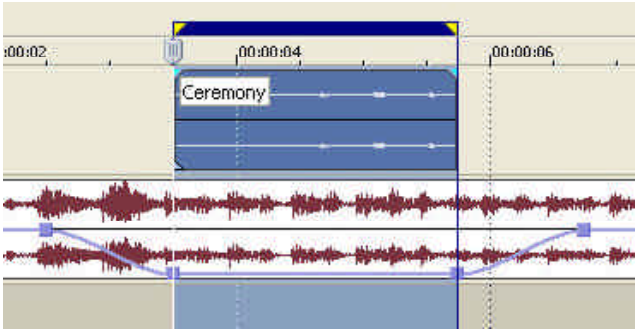
In order for the volume to change, you must add two nodes. The first node will be left at the original volume. The second node will then change to the new volume. Likewise at the end we also need two nodes. The first would then be set to the new volume and the second would be set to the original volume.

Since this process uses four nodes, the FourPoints script makes it easy to add all four nodes and then easily change the middle two. Running the FourPoints script will add four new nodes to the volume envelope



on the selected audio track. As shown in this image, all four nodes will be set to the same volume.

Once the four nodes are in place, the middle two nodes can be simultaneously changed by dragging the envelope line between the two nodes. Simply drag the



line downwards to decrease the volume in the area where the speaking occurs. Alternately you also change the nodes individually as desired.

Other types of envelopes may benefit from this process as well. For example, you may wish to add four points to a Composite Envelope in order to show a video on a lower track temporarily. Or perhaps four points on a Velocity Envelope to temporarily change the speed of a clip. Fortunately the script can be modified to work with these various types of envelopes as well.

A simple modification that can be made to the script is the distance between the nodes on each end. As written, the script will add nodes one second apart. To change the distance, simply modifiy the timecode in the following line:

```
Timecode FPDist = new Timecode("00:00:01:00");
```

Another simple modification is determining if the secondary nodes are inside or outside the region. As set, nodes will be placed on the region borders plus the specified distance outside region. There may be times when you wish the other nodes to be placed inside the region instead. This can be easily done by finding the two middle "SetPoint" lines with '- FPDist' and '+ FPDist'. Changing the + to - and the - to + will add the secondary points inside the region instead of outside the region.

While this script is easy to use, it may be easier to use a more powerful script such as Excalibur which can easily add four points to the Composite Envelope, Volume Envelope, and Velocity Envelope as well as ALL envelopes that are on the selected tracks. If you have a lot of voice overs with a music bed, Excalibur also has the Voice Over tool which automates volume reduction whereever talking is found.

Adding four points to envelopes is an incredibly useful process. Use the script on the next page to make the process easy.

Copy the following text or download from *http://www.jetdv.com/scripts/FourPoints.cs*

```
/**
 * This script will set four points around the selection area on all selected tracks.
 *
 * Written By: Edward Troxel
 * Copyright 2004 - JETDV Scripts
 * Modified: 07-18-2006
 **/

using System;
//using System.IO;
//using System.Windows.Forms;
using Sony.Vegas;

public class EntryPoint
{
  Vegas myVegas;

  public void FromVegas(Vegas vegas)
  {
    myVegas = vegas;

    //Change this line to change the distance between the points
    Timecode FPDist = new Timecode("00:00:01:00");

    foreach(Track track in myVegas.Project.Tracks)
    {
      //Now check for Volume Envelope
      if (track.IsAudio() && track.Selected)
      {
        // Find the volume envelope on this track - add if needed
        Envelope VolEnv = FindEnvelope(track, EnvelopeType.Volume);
        if (null == VolEnv)
        {
          VolEnv = new Envelope(EnvelopeType.Volume);
          track.Envelopes.Add(VolEnv);
        }

        double ClipVol = VolEnv.ValueAt(myVegas.SelectionStart);
        //Now set the points
       SetPoint(VolEnv, myVegas.Transport.LoopRegionStart, ClipVol);
       SetPoint(VolEnv, myVegas.Transport.LoopRegionStart - FPDist, ClipVol);
      SetPoint(VolEnv, myVegas.Transport.LoopRegionStart + myVegas.Transport.LoopRegionLength + FPDist, ClipVol);
      SetPoint(VolEnv, myVegas.Transport.LoopRegionStart + myVegas.Transport.LoopRegionLength, ClipVol);
      }
    }
  }

  private Envelope FindEnvelope(Track track, EnvelopeType etype)
  {
    foreach(Envelope env in track.Envelopes)
    {
      if (env.Type == etype)
      {
        return env;
      }
    }
    return null;
  }

  private void SetPoint(Envelope menv, Timecode PLoc, double PVal)
  {
   EnvelopePoint a = menv.Points.GetPointAtX(PLoc);

    if (a == null)
    {
      a = new EnvelopePoint(PLoc, PVal);
      menv.Points.Add(a);
    }
    else
    {
      a.Y = PVal;
    }
  }
}
```