

Fix it in Post – Color Correction with Final Cut Pro

With RICHARD M. HARRINGTON



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Author's Bio/Description

A certified instructor for Adobe, Apple, and Avid, Rich is a practiced expert in motion graphic design and digital video. His producing skills were also recognized by AV Multimedia Producer Magazine who named him as one of the Top Producers of 2004.

Rich is a member of the National Association of Photoshop Professionals Instructor Dream Team, and a popular speaker on the digital video circuit. He is also an instructor at the Art Institute of Washington and the American University in Washington, D.C.

Rich is an internationally published author. His book, Photoshop CS for Nonlinear Editors, was the first of its kind to focus on Photoshop's application in the world of video. He is also a contributing author for Final Cut Pro On the Spot, After Effects On the Spot, Broadcast Graphics on the Spot, After Effects at Work, and The Photoshop World Dream Team Book, Volume 1.

A Masters Degree in Project Management fills out Rich's broad spectrum of experience.

RHED Pixel – www.rhedpixel.com

Photoshop for Video – www.PhotoshopforVideo.com

Fix it in Post

Lots of folks open of the color corrector, play for a few minutes, get confused by the scopes, and run. Well, after this class, the color corrector will be your best friend. Use color correction as an opportunity to improve your show. It's the polish that really makes a show stand out. Every shot can be tweaked and improved; too little contrast, the wrong color balance, too much saturation, the whites too hot...the list of problems can go on forever. Here's the best part: With the three-way color corrector and its friends, you can often fix these problems in less than a minute!

In no time you'll master the three-way color corrector—and start making it do some pretty slick tricks. Pretty soon you'll even know about using composite modes such as Add, Multiply, and Soft Light. This may all seem pretty scary to an editor ("But I'm not a colorist!"), but hang on, I'll get you there.

Why is there an Exclamation Point?

For those of you in hurry, and we suspect most of you are... here's a 'quick' way to spot problems. The range check command (View > Range Check). An exclamation point means you have a problem, as do red stripes. Green stripes just mean areas that are close to the legal limit.

Excess Luma (Ctrl + Z): If your image is too bright, you'll have problems in a broadcasting environment. Be sure your whites don't exceed their limit. Simply apply a Color Corrector 3-way and pull the White slider to the left until the Exclamation point goes away. While the Broadcast Safe Filter may get the luminance problem, most video can afford a few tweaks to the Color Balance and Saturation. That's where the three-way filter really shines.

Excess Chroma: If your image is too saturated, you'll often have colors that bleed (or spread) across the screen. Reds and Yellows often have this problem. You can use a Color Corrector 3-way or the Broadcast Safe filters to fix this problem. Simply Desaturate or Clamp the illegal colors.

Both: This is how we usually work. Warn us if there's a problem by popping up the exclamation point. A little work with color correction usually solves the issue. If we have a hard time spotting the trouble area (luminance vs. saturation) we'll just switch to one of the specialized views.



notes

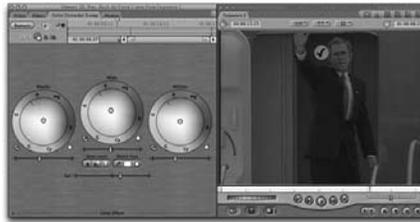
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Yeah, It's that Easy

The Color Corrector 3-Way can solve many problems (and it's fast!) Most people get overwhelmed by the interface. The key is to use one slider at a time. We usually work in this order to fix a 'typical' shot that's not broadcast safe. Make sure your range check is on for both luminance and saturation and view things on a broadcast monitor if possible.

1. If needed, rebalance the image by sampling with the eyedropper. You may want to turn the Range Check off temporarily so you can get a better selection.
2. Adjust the White slider. Slide it slowly to the right until your red zebra stripes disappear.
3. Slide to the Mids slider to adjust the exposure.
4. Roll the Black slider in to the Right to restore contrast.
5. Re-adjust the White, then Mids if needed.
6. Roll a little Saturation in (or out) to taste.



Playhead Sync

You've applied color-correction to a clip in your timeline and want to access the controls. You double-click on the clip, make some adjustments and go to the next clip. Somewhere along the way you forget to load the clip you want to work on. Only after several clicks do you discover that you've messed up a shot by color correcting the wrong item.

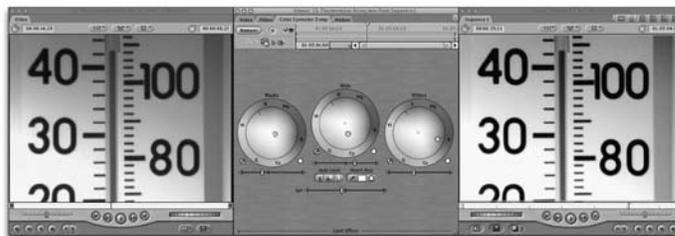
The viewer can now keep up with what you are doing in the timeline automatically. In the viewer there is a new drop-down menu for playhead sync. Setting the viewer to Open will automatically open the shot that you are looking at. This is VERY useful for color correction or other effects work.

You'll Poke Your Eye Out

Inside the Color Corrector 3-Way, you'll see three eyedroppers in the upper area. These are useful for fixing color balance. Think of this as

white balancing in post, we've even fixed video shot on the wrong filter.

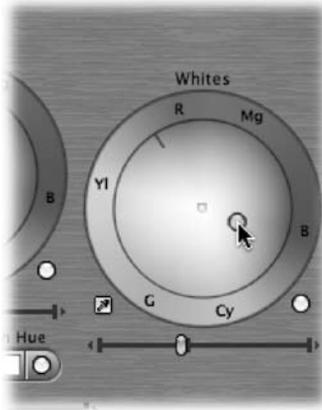
1. Use the White eyedropper to click on something that should be white. Don't go for the white's of someone's eyes, rather a large area like a wall or
2. Use the Blacks eyedropper to click on something that should be black.
3. The Mids eyedropper really only works when using a chip chart or something with 50% gray.
4. If the color balancing is over-compensated, you may need to drag back towards center in the color wheel.



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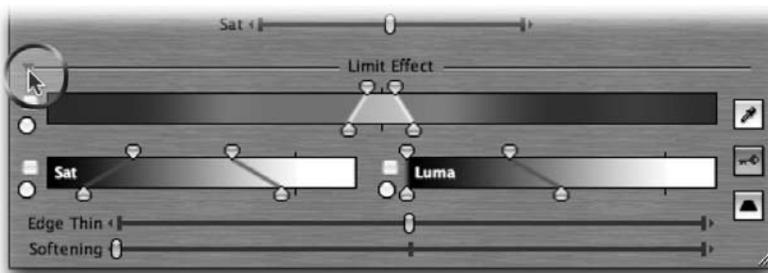
Gear Up

Most of the time, holding down the Command key slows down your sliders. In the Color Corrector filter, it sometimes has the opposite effect. If you are trying to remove colorcast or quickly roll the hue, hold down the Command Key to make quick adjustments in the color wheel areas. In other areas of this filter, it serves as a Gear Down command and will slow the dragging of the handles.

Pandora's Box

When the Color Corrector 3-way was introduced, there was a lot of confusion. Everyone seemed to be drawn to the controls at the bottom of the screen. They wanted to tweak and fiddle, and pretty soon people started complaining that they couldn't get consistent results.

Those controls are for limiting the effect. This is called secondary color correction and is for isolating your touch-up to specific areas. Unless that's what you want, don't touch! Fortunately, these are now in a hidden area of the interface of Final Cut Pro 4.



No Adjusting on Diging

Those experienced editors switching to Digital systems from older analog systems may go bit nuts during capture. See, they've always been trained to adjust the signal during the capture stage. An experienced editor will twiddle setup knobs on their deck while loading footage into their systems. This has the distinct benefit of minimizing the amount of color-correction necessary.

The problem with Digital Video systems? You CAN'T do this. The video is really just data being sent across a cable. Just as you can't spell-check an email as you download it, the same holds true. For Digital Video systems, capture first, then adjust signal with filters.

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Safe (and Lazy...)

Quick, the show you're working on needs to be made broadcast legal. You can afford the render time, but not the time necessary to figure out what's legal and what's not. Or maybe you don't know how to read scopes? Whatever.

1. Create a new sequence with settings that match the sequence, which needs fixing. Name it "Safety sequence" to help you know the difference between the two.
2. Double click the Safety sequence (so it's open) in the browser.
3. Select your finished sequence in the Browser. You're going to nest (put the master sequence, your main sequence you've been working days/weeks/months on) into the new sequence. Drag the "master" sequence into the safety sequence. This is called nesting and will permit you to put a single effect on the entire show.
4. In this case the effect will be Broadcast Safe (Effects>Video Filters> Color Correction> Broadcast Safe. Add this single effect and it will make the entire show legal.
5. Render. Yes, it's a red render bar when played back under Safe RT (in most circumstances). But its presets are pretty conservative and keep most work passing legal requirements.



Backwards Thinking

When color correcting, you'll often need to see the difference between where you started and where you are. Fortunately there's tool for this.

1. Switch to color correction arrangement. Layout-> Arrange -> Color Correction.
2. Underneath the Scopes is a tab called Frame Viewer, switch to it.

3. The Frame Viewer comes up default with a vertical split. On the left is the current frame (green control handles), on the right is the current frame without any filters.
4. Switch one of the sides to show you the previous frame. Now you can compare your color correction to the previous shot.

Add It Up

Dark video? That never happens to us of course, but we hear that this is a good fix. If you have a shot that's really dark, you can use screen modes to lift the details out.

1. Place a cloned copy of the dark shot above (option + drag, then hold down the shift key).
2. Contextual + Click and change the Composite Mode. Add works very well to combine the lightest elements.
3. If it is too light, reduce the opacity of the top clip. If it is too dark, clone an additional copy on a third track.



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Keyframing

Sometimes problems in a shot just pop in and out (like relatives). Or maybe the color issue changes over time. Don't worry; you can keyframe the color corrector effects to make gradual fixes. In the upper-left hand corner of the visual interface of the effect is an Insert/Delete keyframe button. By clicking this you will add a keyframe for all properties. This can be useful if you want to adjust the midtones and saturation to simulate lighting effects over time. In fact you can even pull off a 'timelapse' effect with lighting sources.



A Spot of Color

This specialty effect can be used to add dramatic emphasis to a shot by leaving only one color and stripping the rest. To pull this effect off, you will need to use the Color Corrector 3-way filter. This effect works best on clip with a dominant color region.

1. Apply the Color Corrector 3-way filter and access the filters visual controls.
2. Using the Select Color eyedropper in the Limit Effect controls, select the desired color you'd like to keep.
3. Click on the key icon to view the matte. Use the Select Color eyedropper while holding down the shift key to add to the matte.



4. Finesse the matte by adjusting the Width and Softness sliders for the Chroma, Saturation, and Luma values in the Limit Effect controls. When the desired color is clearly selected, there will be no holes in your matte.

5. Click the key icon twice to toggle back to View Final.
6. Slide the Saturation slider to the left to desaturate the clip.
7. At the very bottom are controls to tweak the effect. Check the invert box at the bottom of the parameters list. Adjust the Thin/Spread and Softening sliders to enhance the effect.

A Frame with a View

There's even more to love about the Frame Viewer.

- The border between the green/handles allows you to change the area where you're splitting the frame,
- Bonus, three buttons on the bottom:
 - V-split – vertically split the frame
 - Swap – Swap sides
 - H-Split horizontally split the frame
- Double bonus, the drop down menus? These permit you to look a shot ahead or behind to compare the clip you're correcting.



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Make Your Gray Skies Blue

It's not unusual for your skies to be washed out. This is often a problem as video only supports a low contrast ratio between darks and highlights. By isolating the color-correction, we can achieve a fix just to the problem area.

1. Apply the Color Corrector 3-way filter and access the filters visual controls.
2. Using the Select Color eyedropper in the Limit Effect controls, select the desired color you'd like to keep.
3. Click on the key icon to view the matte. Use the Select Color eyedropper while holding down the shift key to add to the matte. You can click in the Viewer or Canvas window.
4. Finesse the matte by adjusting the Width and Softness sliders for the Chroma, Saturation, and Luma values in the Limit Effect controls. When the desired color is clearly selected, there will be no holes in your matte. Adjust the Softening slider as well to improve the matte.
5. Click the key icon twice to toggle back to View Final.
6. Adjust the color balance wheels and Saturation of the shot.



You may need to add a second color-corrector to finesse the scene or isolate another problem area.

One Hot Spot

Have a problem in just part of your image? There's two approached worth taking.

Broadcast Safe: This filter will clamp the illegal levels and knock them into place. It can sometimes lead to banding, but its fast and easy to apply.

Color Corrector 3-Way: A better method is to select the hot spot with the limit effect command. Base your selection solely on the luminance (ignoring Saturation and Hue). Be sure to Feather your selection significantly. Now your adjustments to the Mids and Whites will be much gentler.



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The Ultimate Full-Color Spread

I'm about to make your entire screen a mess (it'd be much better at this point to have that Cinema Display or a 2nd screen.) Now that we understand the possibility of the frame viewer we can have more than one frame viewer. Let's build an entire layout dedicated to color correction.

1. Move your viewer down to the lower left corner (more on that later).
2. Add scopes and move them to the upper left corner.
3. Tearing off the frame viewer, move it to the top row of windows (upper right corner).
4. In my screen capture I've already added a color correction effect to my shot. I've changed the Frame viewer to show Next Edit and Previous Edit. This way I can maintain a "look" from shot to shot.
5. Rearrange your Viewer on top of the Browser, making sure to just leave a little space to mouse over the Browser if necessary.
6. Position the timeline to sit in the bottom right.
7. Use the up and down keys to go from shot to shot.
8. The color corrector controls are directly under your scopes...easy for to glance up at.

Is this cramped? Absolutely. Go get a second monitor (or a nice 20", 22" or 23" Cinema Display. Most editors swear to having a two-monitor system (while others swear AT only having a one monitor system).



Joy in Repetition

While Joy in Repetition is a GREAT song (look it up) the same cannot be said for Color Correction in Final Cut Pro. Let's see, you've color corrected one interview (and it looks great!) At some point, that person is going to pop back into your show.

Let see: Same person - Same location - Same camera - Same lighting

We bet you can use the same color corrector. Simply drag the effect icon off to a bin. Name the effect so you can easily find it. Now you can drag the effect preset onto your new clip. Unless something dramatically changed, the effect should work. If you do need to tweak, your at least 5 steps closer to 'done'.

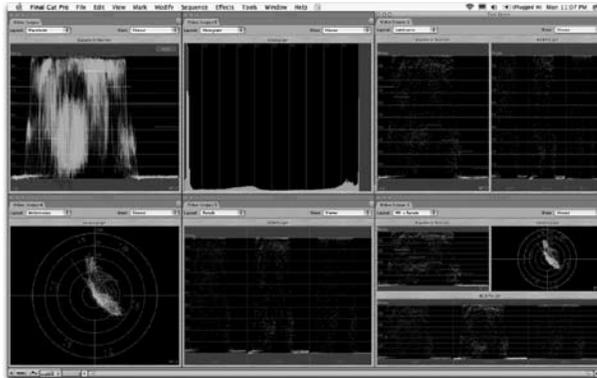
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Help! My Scopes are too small...

Often times you may want to see multiple scopes as once. You had this option before, as FCP allowed you to view groupings of scopes. Now however, you can have more than one “scope” window. In fact you can have up to six (which is more windows than unique scopes, go figure). Simply choose Tools>Video Scopes (Option + 9) repeated times to add scopes.



Help! My scopes are hard to see...

By default... the scopes in FCP use light lines to signify their results. That’s fine and all... but that doesn’t mean you have to like it. Simply contextual + click on a scope and you can access SEVERAL different display options that may help you see your results more clearly.



The faded 60’s color photo

There are many times when an editor is looking to degrade or desaturate the color in video footage or still photos being are using in their project. The problem lies that if they want all the footage to look the same there is sometime a problem with color continuity. You may find that still images edited in Photoshop do not match the video footage edited in FCP.

So do both parts in FCP to maintain continuity. Save as a favorite then you can apply it to both clips and stills once you have the setting you like.

To make you videos look as if it is a faded color photo from the 50’s and 60’s

Filters > Color Correction> RGB Balance

Try these settings to start.

	Reds	Greens	Blues
Highlights	341	347	324
Midtones	132	132	127
Blacks	17	-24	6

It’s a Wash

Need to put some life into washed out video? Composite modes can be used to increase saturation and contrast as well. Simply placed a clone copy of a clip on the track above and change its composite modes. Be sure to experiment with the several different modes to get alternative looks.



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Color Grading

One of the questions we get all the time about color correction is “Yeah, but how do I know if there’s a problem?” Most people using the range checks quickly learn that their signal needs to fall within a certain range. But that’s not where you stop.

Sometimes you need to adjust the colors of a scene for emphasis or narrative purposes. We often modify (or grade) the colors in a scene to add shot-to-shot consistency, as well as to emphasize a mood or feeling. If using color as a major character in your production sounds scary, might we suggest you pick up *The Visual Story*, by Bruce Block?



Adding Something Back

Too many people forget that the color correction can be used to add more “umph” to the look of your video. Scenics especially often need some help to make them jump out. Remember however – this is not to be used for broadcast as this may cause your video to be out of range.

Select your clip then add either the Standard or 3-way Color Corrector to it. Open the visual filter version you have selected and then slide just the “Sat” or “Saturation” sliders over till you get the effect you desire.



Copyright: CMP Books & Richard Harrington

Acknowledgments: Abba Shapiro, Gary Adcock, Jeff Greenberg

Web site Info: www.rhedpixel.com, www.photoshopforvideo.com

Contact Info: RHED Pixel for production services, Creative Cow for technical questions.

For more - check out Final Cut Pro on the Spot

