

Larry's Final Cut Pro Newsletter

Volume 1 -- January, 2004

Editor: Larry Jordan

Welcome to the first edition of my Final Cut Pro newsletter!

The goal of this newsletter is to provide information helpful to the professional, high-end user of Final Cut Pro. This will publish monthly, around the middle of each month.

Your opinions and suggestions are welcome.

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So, welcome aboard and let's get started.

Using "White" versus "Super-white" in Final Cut

This whole "White" versus "Super-white" issue surfaced when we started combining computer graphics with video. Normal SD video puts white at 100 IRE units in a YUV color space. PhotoShop, and other computer graphics programs, create graphics using a default RGB color space that puts white at 109% of "broadcast white."

These excessive white levels are called, "Super-whites."

This issue has been further complicated by DV footage (MiniDV, DVCAM, and DVCPRO) that uses Super-whites, while SD footage (Beta SX, SP, and DigiBeta) uses "normal" whites, as do the rest of the broadcast and DVD industry. (I use "broadcast" to mean the professional video industry.)

Putting computer graphics that are higher than 100 IRE units (i.e. RGB values greater than 235 units for any color) into sequences designed for broadcast or DVD will potentially cause buzzing in the audio, tearing whites, bleeding colors, and, often, rejection by Q&A engineers at your distribution outlet.

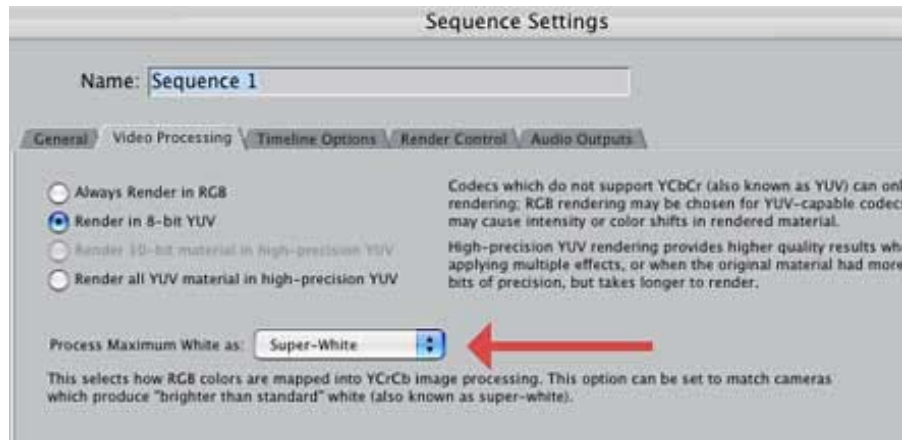
To solve this problem, Final Cut added the ability to clamp these "super-

whites" and make them compatible with SD video.

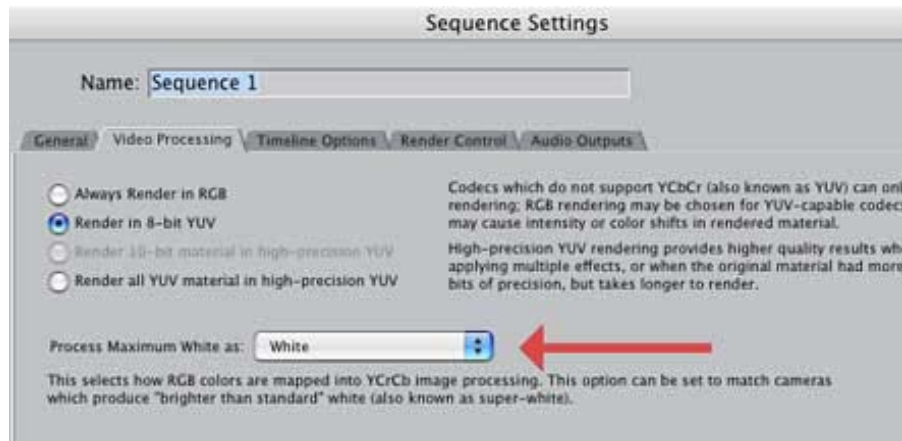
The setting that controls this is:

- For CURRENT sequences: Sequence -> Sequence settings -> Video processing tab
- For FUTURE sequences: Final Cut Pro -> Audio/Video Settings -> Sequence Settings -> Video processing tab

Here's what the sequence setting looks like for super-white:



And, by adjusting the pop-up menu, this is the setting for white:

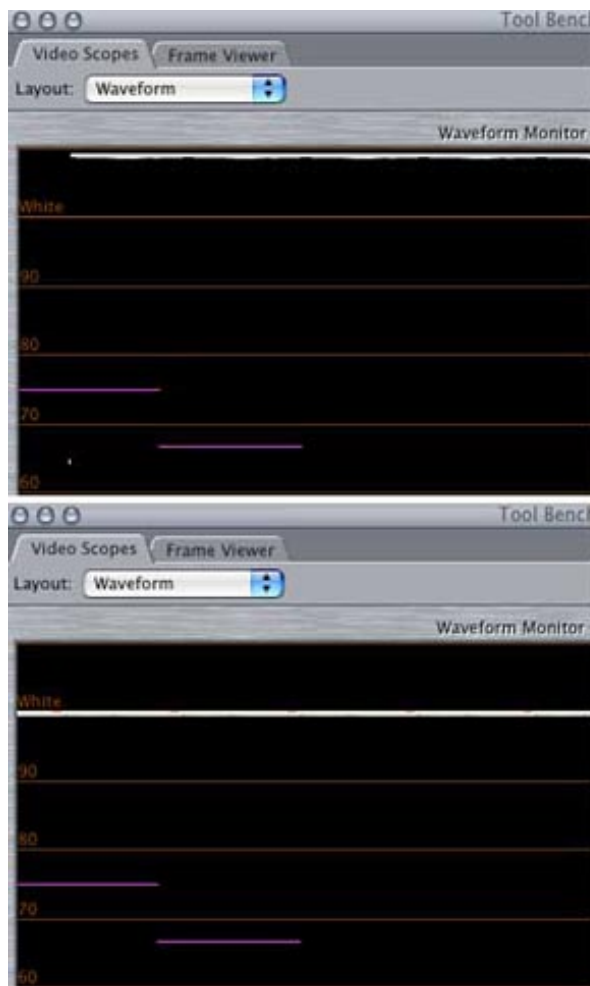


Here's how to set this in FCP 4.1.x. There are, essentially, two options:

- **Option 1 (Output to DV):** If you are outputting to DV, whether or not you are mixing formats, set the pop-up menu to "Super-white."
- **Option 2 (Output to DVD, Beta or broadcast):** If you are outputting to DVD, SD, or broadcast, set the sequence to "White."

The big benefit to setting this correctly is that you no longer need to worry about white levels in your graphics. Use computer white and computer black and everything will be OK. Final Cut will handle the white level conversion. (It also handles the black level conversion, too, for that matter.)

Here are the results of importing a super-white graphic into a sequence:



As you can see, the white setting clamps all imported RGB graphics and sets them to the correct level.

Finally, we can concentrate on creating great looking computer graphics, without worrying about whether we set the white levels too high. Final Cut handles it.

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Staying current: Thoughts on FCP versions and upgrades

Since the release of Final Cut version 4, the software has been upgraded at a furious pace -- four updates in less than eight months. And OS X has been more than keeping pace. For a while there, it looked like Apple was engaging in weekly updates. And this is to say nothing of QuickTime, device drivers, and the rest of the professional applications.

Thankfully, over the last couple of months, the dust has started to settle. Which gives us the ability to get caught up.

Here are my current recommendations to clients:

- If you are on a G-5, move immediately to OS X 10.3.2 and Final Cut 4.1.1. The benefits are significant and reliability vastly

improved.

- If you are on a G-4, you have three OS choices: 10.2.6, 10.2.8 or 10.3.2. The benefits of OS 10.3 are significant, but even more, the release of FCP version 4.1 squashed well over 100 bugs from the initial release.
 - If you are using a Medea RAID, you will need to update your hard disk drivers when you move to 10.2.8 OR 10.3.x. If you are using other RAIDS, except the XRAID, you may also need to update your drivers.
 - The move to 10.3 also means updating the drivers in your SCSI cards. The operating system made significant changes to how the PCI bus works and most SCSI cards need updating.
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Commercial

Larry Jordan is one of the few Final Cut Pro trainers Apple-Certified to teach both Basic and Advanced levels of FCP.

Services available include:

- System Design
- Installation
- Training
- On-going consulting
- Support

For more information, call (818) 879-5105 -- or send an email to: larry@larryjordan.biz.

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Techniques: Audio channel output tricks

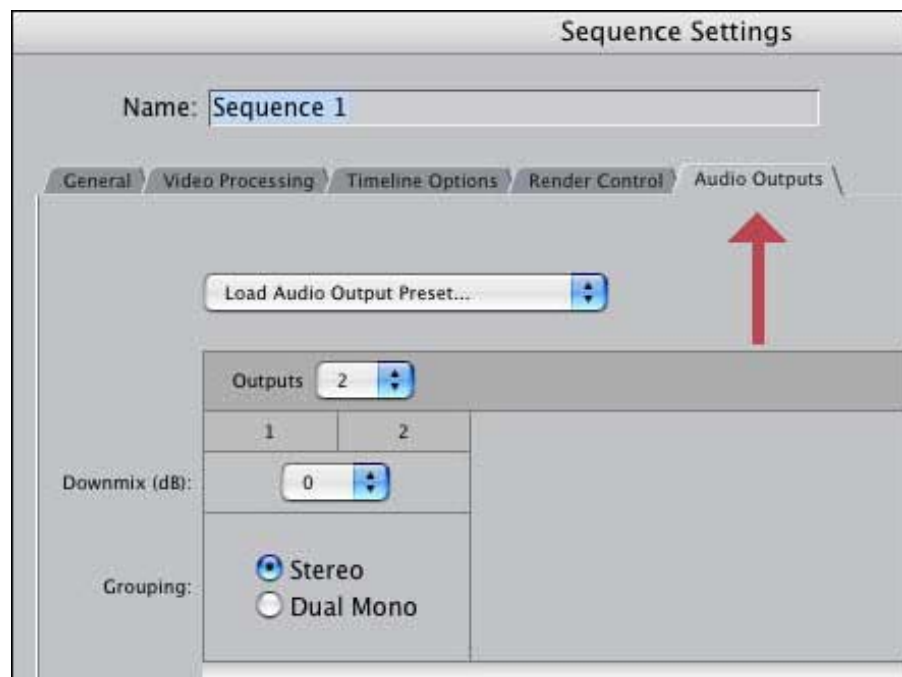
All versions of Final Cut only support two-channel audio *input*. However, new with FCP 4 is multi-channel *output*.

While we CAN'T send an audio track to more than one output channel at the same time, we CAN send any audio track to any output channel. And we can create any even number of audio output channels -- from two to 24.

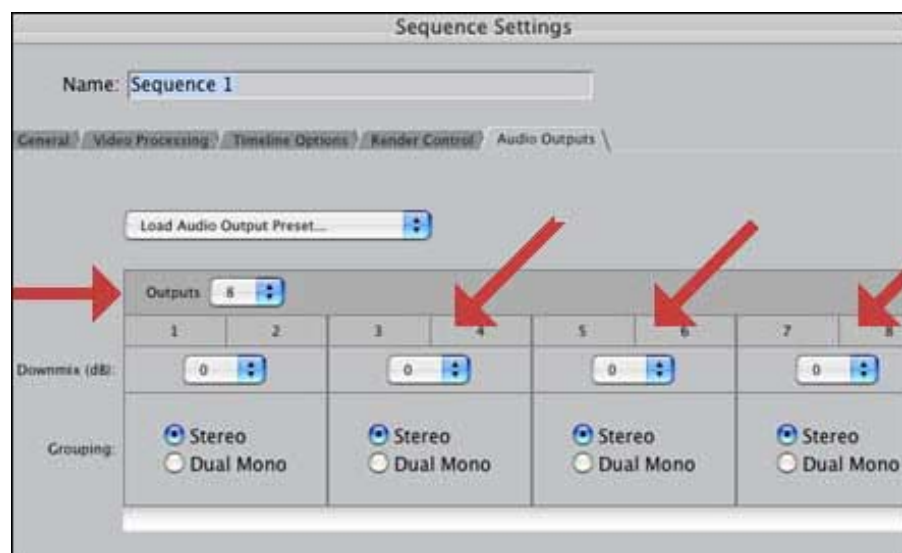
Keep in mind, however, that DV output only supports two channels. So, you'll need extra hardware, like an AJA I/O box or Black Magic card, to get more than two audio channels out.

Here's how to set the number of audio output channels:

1. For EXISTING sequences, go to:
Sequence -> Sequence Settings -> Audio Output tab
2. For FUTURE sequences, go to:
Final Cut Pro -> Audio/Video Settings -> Sequence settings -> Audio output tab

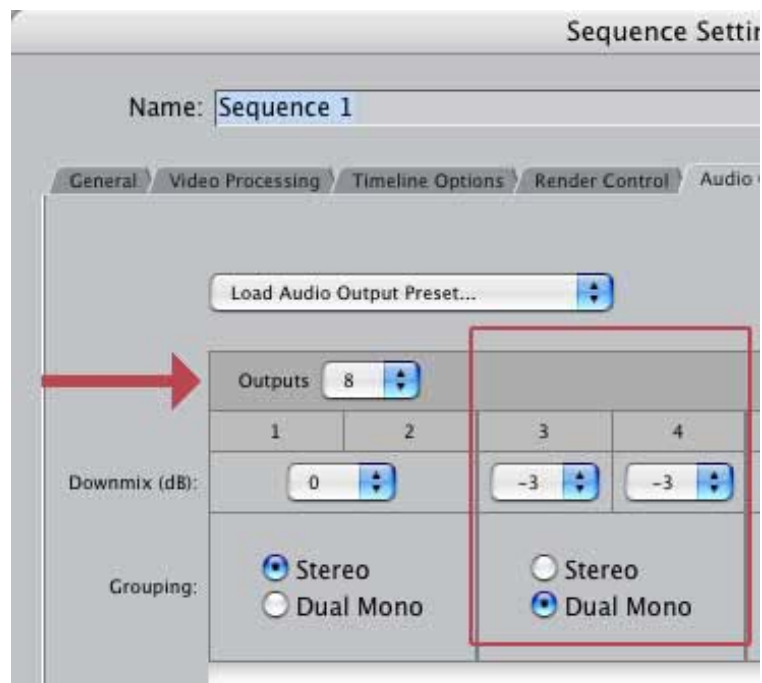


- From the pop-up menu, select the number of audio outputs you need (in this example, we'll use eight). Note that they appear in pairs.



- Then, set each output pair to either Stereo (the default) or Dual Mono, then close the dialog box.

Stereo automatically pans the odd numbered channel to the left and the even number channel to the right. Dual mono pans both tracks center. If there is NO relationship between the audio on the channels, use Dual Mono. Otherwise, Stereo is great. Leave the level settings at zero for Stereo or -3 for Dual Mono.

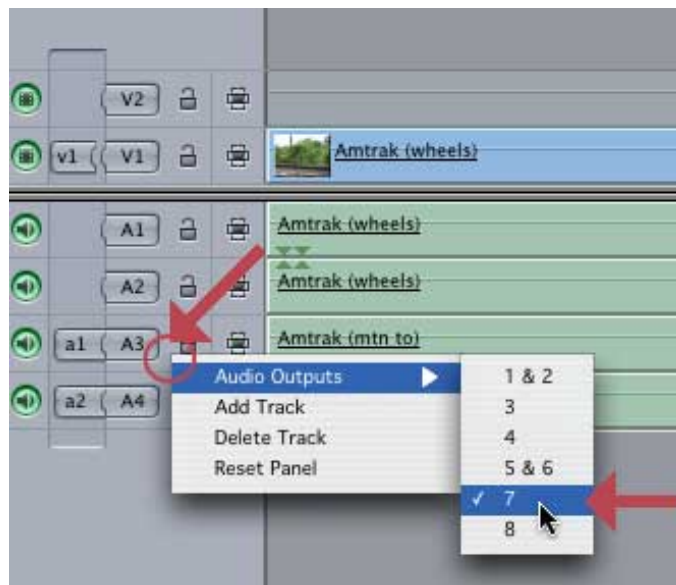


- Now, to assign an audio track to a particular output channel, go back to your current timeline and CONTROL-click in the small space between the patch panel and the patchlock.



- In the pop-up menu, select "Audio Outputs" and drag over to the channel(s) you want to assign your audio track. In the screen shot above, we are mapping track one to output one and two.

Notice that stereo pairs are listed together (i.e. 1 & 2 and 5 & 6), while dual mono channels are listed separately (i.e. 3, 4, 5 and 6).



7. In this example, we are assigning audio track 3 to audio output seven, which is a dual mono track.

The advantage to this flexibility is that you can reorganize your audio tracks as necessary, or feed multiple tracks to the same output. For example, all sound effects tracks could go to one output channel. Then, you can record that track to a DA-88 for later mixing, or export your output to an AIF or OMF file.

Audio exporting is something we will discuss in a future issue.

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Client report: Limitations on project size

Here's a quick heads-up. I have a client that is running into frequent crashes and system hangs using FCP 4.1. After looking at their system, I realized that their project -- a documentary -- is over 90 MB in size!

My guess is that projects this large cause FCP to spend way too much time recalculating when edits are made or clips are moved.

To protect your work and optimize your performance:

- Create backups of your work every day or two by doing a "Save as..." This is better than duplicating a file in the Finder.
- Keep project sizes below 50 MB (there's no magic in this number, just keep 'em from getting too big.)
- Use Render Manager and Media Manager to move your files, rather than using the Finder.

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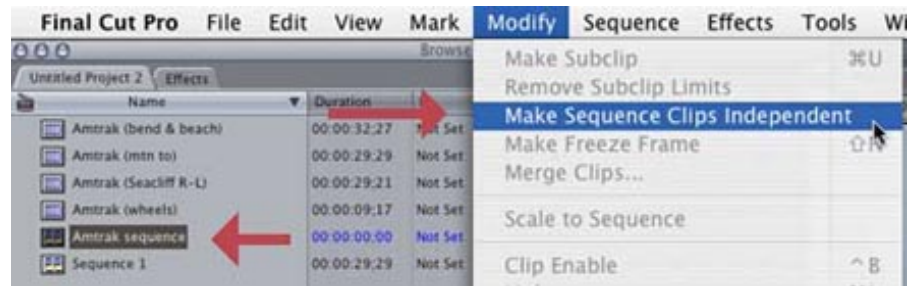
Techniques: Simplify up-rezing

Media Manager is a quagmire that can trap the unwary. It is way beyond the scope of this short note to explain all the tricks of Media Manager.

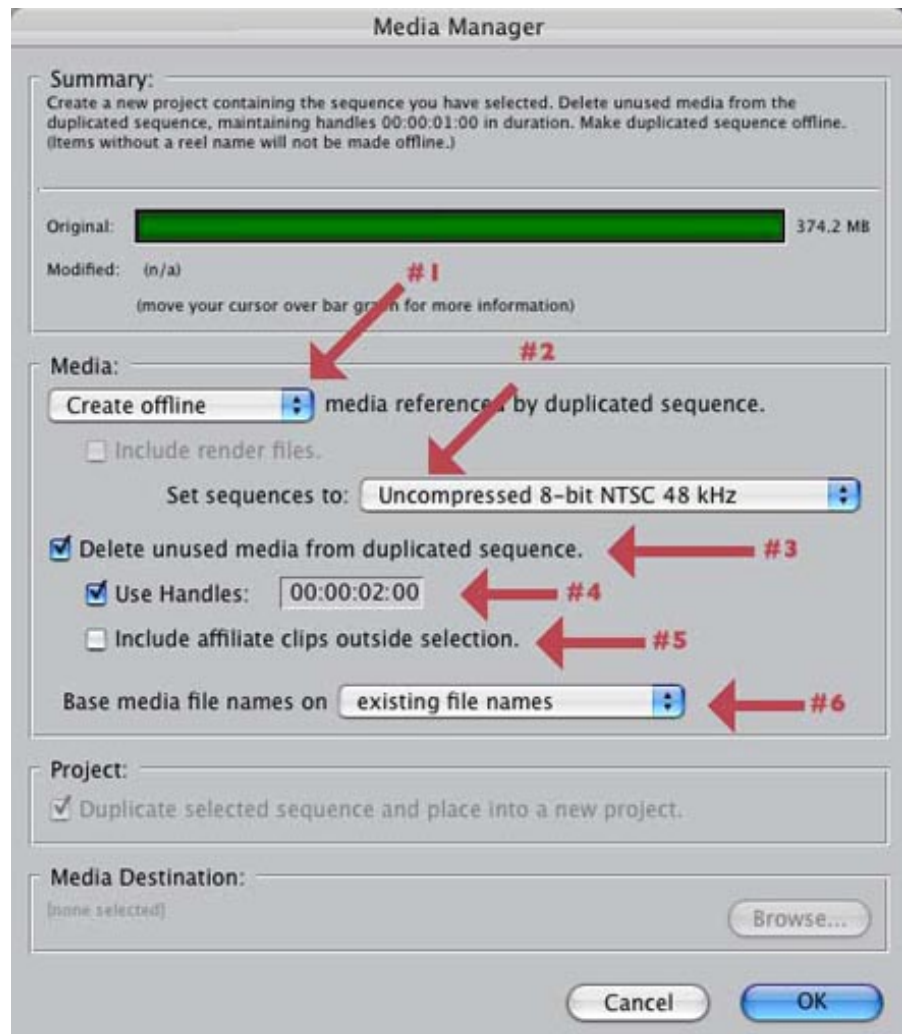
However, if you want to take an existing project that uses footage captured at low resolution and up-rez it, here are some tricks that will make it a whole lot easier.

Here's what to do:

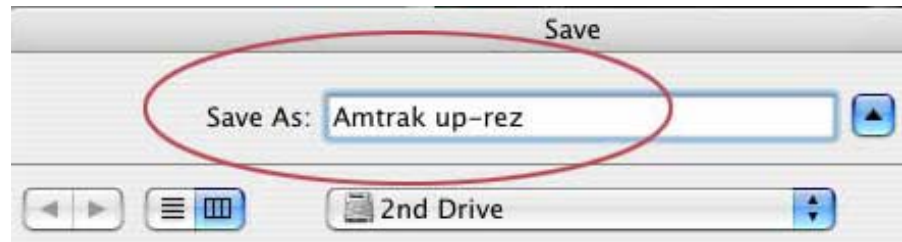
1. Go thru each sequence you want to up-rez and make sure all reel numbers are correct. Correct any that are wrong.
2. Select the sequence you want to up-rez in the browser. If you have more than one, work with one at a time.



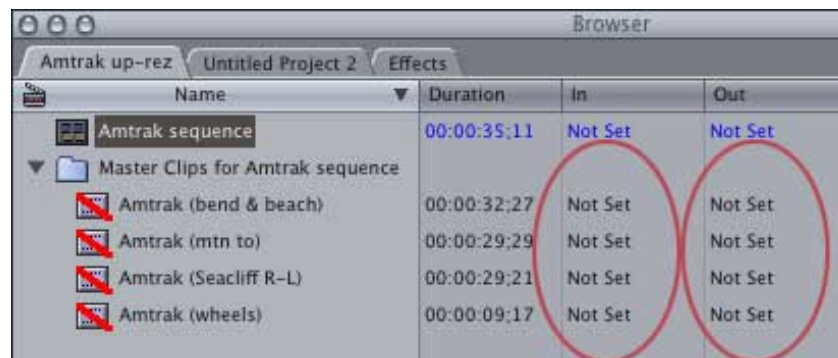
3. Go to Modify and "Make Sequence Clips Independent." This is **THE** most critically important step.
4. With the sequence still selected, open File -> Media Manager.



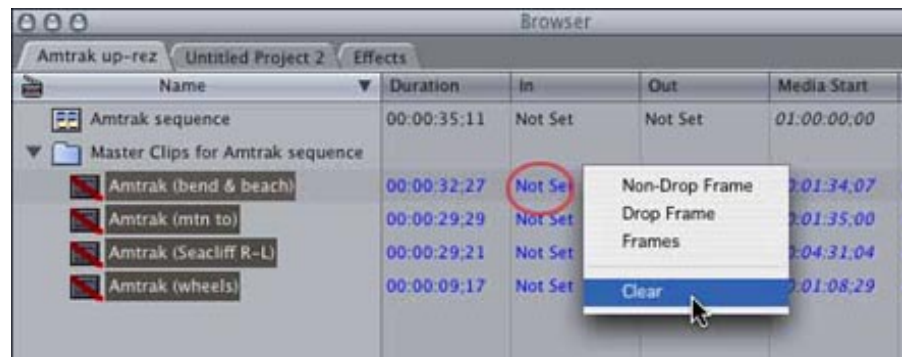
5. Make the following settings:
 - Select "Create Offline" (#1)
 - Set Sequences to the codec you want to use for your final sequence. In this example, we are using: "Uncompressed 8-bit NTSC 48K" (#2)
 - CHECK "Delete unused media from duplicated sequence." (#3)
 - Set handles to 2:00 (or greater) (#4)
 - UN-CHECK "Include affiliate clips." (This is another important setting) (#5)
 - Unless you've renamed clips in the Browser, leave #6 alone.



6. Click "OK" and give your new project a name (i.e. "Amtrak up-rez")
7. When Media Manager is done, close all projects (not necessary, but helpful)
8. Open your newly duplicated project
9. Open the Master Clips folder in the browser

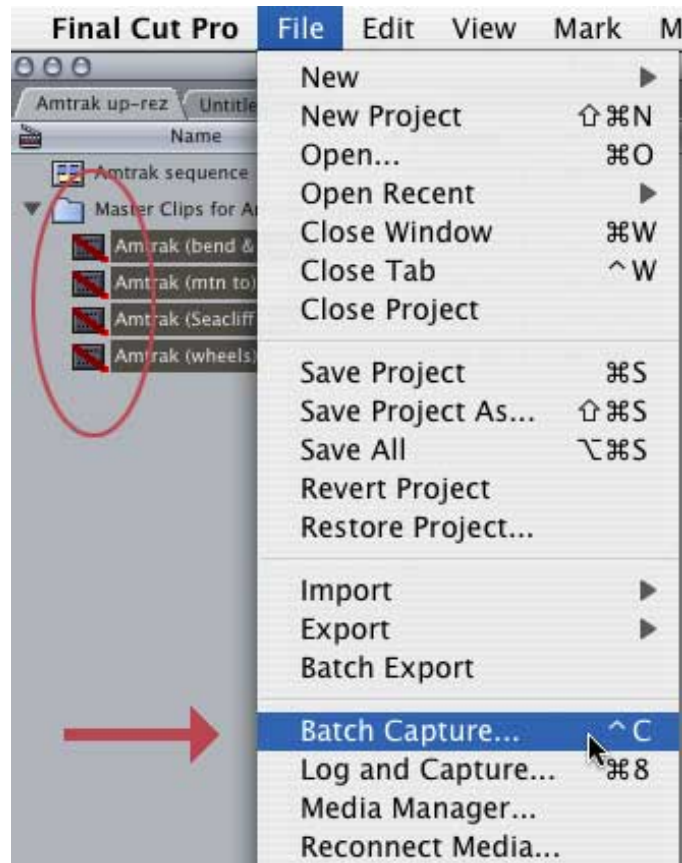


10. This is the **SECOND** most important step:
 - Select all clips in the Media folder
 - CONTROL-click on the In and set all In's to Clear
 - CONTROL-click on the Out and set all Out's to Clear



11. Sort your clips by reel number

12. If you need to set up each tape (i.e. bars and tone), go to step 13, otherwise, skip to step 16
13. Select all the clips on one reel
14. Load the reel and set it up (i.e. bars and tone)
15. Skip to step 17
16. Select all your offline video clips
17. Select File -> Batch capture



18. When the Log and Capture window opens, verify that all your capture settings, scratch disks and clip settings are correct
19. Capture your clips.

When you are done capturing the first tape, test the clips in your sequence to make sure they are playing OK and that in's and out's seem correct. If everything is working as you expect, capture the rest of your tapes for that sequence.

The reason for selecting "Make Sequence Clips Independent," is that it prevents Media Manager from capturing material that is not in your sequence (i.e. your original captures). This significantly reduces file size.

The reason for setting all Ins and Out's to "not set," is that Batch Capture will then just capture the length of the clip in the timeline, plus handles. This, also, reduces the amount of excess, unneeded material that is captured.

Commercial

Larry Jordan just announced a new support option for Final Cut Pro users --

Remote Support.

This new program provides:

- Faster response
- Less downtime
- Cost savings of 25% or more compared to a personal visit
- Automated upgrades and system maintenance
- The same great service and support

Available starting February 1, 2004, [click here for more information.](#)

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Article: Roll Your Own Keyboard Shortcuts

I wrote an article recently on a new, hidden feature in OS X 10.3 that allows you to create your own keyboard shortcuts or modify existing ones. This technique works across all applications.

Take a look and try it. Let me know how it works.

Click here to read the article -> [Roll Your Own Keyboard Shortcuts](#)

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Wrap-up

Well, that's it for this edition of the newsletter. Let me know what you think, and if you like it, please tell your friends.

Coming up next month:

- Deciding when and how to use Compressor
- Exporting audio for post-production sweetening
- Fun facts with reel numbers
- Another "Client Report"
- And more operating tips.

Thanks -- and have fun editing!

Larry

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