

DIGITAL VIDEO HACKS™

*Tips & Tools for
Shooting, Editing,
and Sharing*

LOCATION

TAKE

SOUND

DATE

SCENE

DIRECTOR

O'REILLY®

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HACK
#48

Fix Timecode Problems on an Existing Tape

Broken timecode will cause you headaches in the long run. Fix it early or invest in Excedrin.

If you have timecode that jumps from one time to an *earlier* time, you will encounter problems when digitizing your footage. For example, if your tape's timecode is 00:34:23;00 and jumps to 00:00:00;00, you have a problem. It is best to fix problems in your process as early as possible. One way to *avoid* this problem is to **black and code your tapes** [Hack #4] ahead of time.

Some people attempt to overcome timecode problems while digitizing by using tape numbers to indicate which breakpoint to locate. For example, tape *TCP001* would be the section of tape before the jump and tape *TCP001.1* would be the section of tape after the break. They continue to increase the last number for each break. Not only does this approach *not* solve the problem, but it might cause additional problems in the future **with tape numbering and EDLs** [Hack #3].

If you are going to fix timecode on a tape, you have to transfer it to another tape or onto your computer. The process of transferring your footage can cause you to lose quality, which you do not want to do. You only want to fix the timecode.

Avoiding a Loss in Quality

In the past, with analog formats such as VHS and Beta, video footage would lose quality when it was copied from one tape to another. Many people refer to this loss of quality as *generation loss*. Fortunately, in the digital world, you can create a copy of your footage without losing any quality.

In order to avoid generation loss, you need to make a *digital* copy of your footage. To create a digital copy, you must first create a digital connection between two capable devices. Most digital video cameras and decks have an IEEE-1394 connector to create a digital connection.



IEEE-1394 is commonly referred to as FireWire® or i.LINK®.

IEEE-1394 connectors come in three types:

- 4-pin
- 6-pin

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- 9-pin

For the most part, you will not have to deal with 9-pin connections. The fun part, though, is figuring out what type of cable you need to connect your two machines. You have three options:

- 4-pin to 4-pin
- 4-pin to 6-pin
- 6-pin to 6-pin

Many sales people I have encountered do not know the difference between the connections, so you should take the time to figure out what you need before shopping for your connection cable. [Figure 4-20](#) illustrates the differences between these different cable types.



Figure 4-20. Choosing the right cable connection for your machines

Machine to Machine

If you are fortunate enough to have more than one digital video machine—either a camera or a deck—you can create a digital duplicate of your tape.



To create a digital copy, you cannot use RCA connections, because those connections are analog. If you use RCA cables for your connection, you will lose a generation of quality.

To duplicate your tape, connect your two machines using the IEEE-1394 cable. Place your master in one machine and a blank tape in the other. Press Play on the machine with your master tape and Record on the machine with the blank tape. While your master tape has broken timecode, only the footage (both audio and video) will be recorded to your new copy. The new copy will have an exact digital copy of your footage, but with new, continuous timecode. If you have a [black and coded tape \[Hack #4\]](#), you can use it to ensure your timecode is continuous.

Digitize and Output

If you have only your digital video camera, all is not lost. You can still fix your timecode problem by using your editing system to digitize your footage and then performing a digital output. To create a digital copy of your footage, you have to digitize your tape using the same codec it was acquired with. For example, if you are using DVCPRO, you should capture your footage using the DVCPRO setting.



There are different types of digital video. You should be aware of which type you are using. Most consumer digital video cameras record DV, but there are also DVCPRO, DVCAM, and HDV formats.

You should also make sure you have enough hard drive space to hold a complete tape. For DV, you will need approximately 13GB of space per hour of footage.

To digitize your footage, connect your camera or deck to your editing system. Once connected, you need to capture the footage from your tape to your system. Each editing system is different, but the end result is the same. Here's how to get started in a variety of popular editing systems:

Avid

Tools → Capture

Final Cut

File → Log and Capture...

Movie Maker

File → Capture Video

Premiere

File → Capture

iMovie

Switch to Camera mode and then click the Record button



If your editing system allows you to Ignore Timecode Breaks, enable that feature.

Once you have digitized your footage, place the entirety of it on a timeline and then export your footage to a new tape:

Avid

Clip → Digital Cut

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Final Cut

File → Print to Video...

Movie Maker

File → Save Movie File...

Premiere

File → Export → Export to Tape

iMovie

File → Share → Videocamera → Share button



You could record back out to your original tape, but if something goes horribly wrong, such as an ugly power surge, you could lose your footage.

Just like using two cameras or decks, when you output your footage to tape, you will have an exact digital copy of the footage on your master tape . . . except for the timecode problems.

Finish Up

When the process is complete, make sure you label the duplicate tape as your *new* master and keep track of which tape is which. As always, proper labeling and organization are [key to successfully completing your project \[Hack #1\]](#).