

Key Editing Techniques of the Film Cutting Room

Film editing is an active process of viewing, cutting, splicing, and rearranging images, all on your own time in your editing room. You physically handle the media and craft it into new shapes, forms, and juxtapositions.

— Film Guy, from his book *Film Editing Nutz and Boltz*

O V E R V I E W

Unlike with a digital system, you need not invest in an expensive course to learn how to operate film equipment. A college course, your equipment rental house, or a film-savvy friend can teach you. As you edit, you will build up proficiency. This chapter's goal is to familiarize you with film editing practices, concepts, and techniques.

GETTING STARTED

Start by rounding up the relevant paperwork so it's handy: Arrange your notes for the scene and your dramatic script or doc outline so they're close by.

ASPECT RATIO

When cutting film, many editors like to see what the audience sees. The viewing screens on the flatbed and Moviola are not the same aspect ratio as a theater screen; they're squarer, like a TV screen. Therefore, many editors crop their screens with tape on the top and the bottom to approximate a theater screen's aspect ratio. (See photo 2m in Chapter 2.) The advantage is that you, the editor, see what the audience sees. The downside is that you do not see the whole film frame. When a shot is blown up or repositioned during editing, the whole frame must be seen. You can solve this by removing the tape from the screen or by using a loupe on the frame.

VIEW FOOTAGE

You saw the footage during dailies but now it's time to view it again so you are thoroughly familiar with it. Cast a critical eye for shots you want to use and their cut points. You may want to use one shot several times, which means you'll be using pieces of it in several places.

PULLING FOOTAGE

METHOD 1 — MOVIOLA AND FLATBED

Run the footage through the machine and cut out the parts of each take that you wish to use. Be generous; take more frames than you think you'll need so later on you won't waste time winding back through the daily roll for a few extra frames. Hang the pieces on the pins in the trim bin and stick a trim tab atop each one. The trim tabs let you easily identify and grab each shot.

As you pull footage, you may grease-pencil cut points on the heads and tails of shots and jot down some notes. If you're pulling pieces for a montage or cutaways for a documentary, pull a lot of pieces. Your initial ideas may change and then you'll have all the possibilities at hand.

METHOD 2 — FLATBED ONLY

Many flatbed editors work from KEM rolls or daily rolls and don't pull pieces. This is advantageous because your trim bin will have only trims, not both trims and pulled footage. The downside to KEM and daily rolls is keeping them in sync along with the time spent shuttling back and forth through the rolls. Many editors don't see these as disadvantages because they feel the shuttling gives them extra viewings of the footage and time to ponder, and they have assistants to put the KEM rolls back in sync.

MAKING THE FIRST EDIT

The cliché about sculpture, that the sculptor finds the statue which is waiting in the stone, applies equally to editing; the editor finds the film which is waiting hidden in the material.

— Tom Priestly, Editor and Cinematographer, *The Thomas Crown Affair*, *Deliverance*, *Return of the Pink Panther*, and others

To make your first edit, take the shot you want from its pin in the trim bin or wind down on your KEM roll. Run the shot until you're certain of the exact frame you wish to cut on. Run it 50 times if you need to when you're just beginning — you won't be the first! It's better to cut long and lop extra frames off later than to have to add frames because you've cut it too tight. Why? Because one-frame edits draw attention as they crackle through the machine and require extra time and dexterity to splice. Once you've decided on your cut point, grease-pencil it and cut on the frame line. That's it! You've made your first cut!



9.a. Marking the cut point on a KEM.

Hang the trim — called a head trim because it's at the head of the shot — in the trim bin. Now splice the pix and track to their reel leaders marked from the head with: Head, Show, Reel # or Scene #, and Cut Pix or Cut Track. If you're cutting the first scene in the show, you can safely label the leader "Reel 1." Since you are starting to build the show and don't know which scenes will be on which reels, you probably won't know the reel number. Until you can determine the reel, just put the scene number on the leader. You will add more scene numbers as you cut the scenes around this scene and splice them to this scene. Once you figure out the reel number, write it on a piece of paper tape and slap it on the leader.

MAKING THE SECOND EDIT

You've cut the head of your first shot; now it's time to cut the tail and add the next shot. First, find your out point (the last frame you want to see of the shot). Again, run the film as many times as you need to in order to decide. Grease-pencil the out point and cut on the frame line. Hang the trim — the tail trim this time — in the trim bin.

CUT THE HEAD OFF THE SECOND SHOT

Moving on, locate your next shot in the trim bin or KEM roll. Run the shot to find your in point. Mark it, cut the head off the second shot, and hang the head trim in the trim bin. Next, splice the tail of the first shot to the head of the second. Voila! You've spliced your first cut. Run it to make sure you're happy.

To continue, repeat what you did between the first and second shots on the second and third shots, namely:

- Cut the tail of the second shot. Hang the tail trim in the trim bin.
- Find the third shot and mark and cut its in point.
- Splice the second and the third shots together.

Continue marking, cutting, hanging trims, and splicing until you're finished with the scene. Then run the scene to review it.

KEEPING UP WITH EDITING FILING TRIMS AND REPRINTING

Whack! Either/Or! This not That! In or Out! We chop up the poor film in a miniature guillotine and then stick the dismembered pieces together like Dr. Frankenstein's monster. The difference (the miraculous difference) is that out of this apparent butchery our creation can sometimes gain not only a life but a soul as well.

— Walter Murch, from his book *In the Blink of an Eye*

As cutting proceeds, you need to anticipate the footage that will be edited next, whether you're doing the assistant or editor work. This means constantly organizing your trims and preparing scenes for cutting. If you don't, time will be wasted waiting for footage and the show can easily descend into a muddle of misplaced shots and eruptive tempers.

KEEPING TRACK OF TRIMS

When you're cutting, organize the trims from the head of a shot to the tail, in ascending ink code order. This way it's easy to relocate one when you want to add frames. If they get out of order, use the ink code to reorder them. Since each pin holds many trims, it's a good idea to rubber-band the pins so a trim doesn't slip into the bin. Hunting for a trim in a bin is as much fun as locating the proverbial needle in the haystack.

After a scene is cut, the pins in your trim bin will droop like a tree after a blizzard. Filing trims and outs¹ is a never-ending chore in the film cutting room, most often performed by the apprentice. Trims need to be filed ASAP so that they are ready when needed for re-cutting.

FILING MOVIOLA TRIMS

Follow these steps to file trims on a Moviola show:

1. If two trims have been spliced together from two different parts of a take or from two different takes, they must be separated and re-spliced in ink code order.
2. If there are gaps in ink code where frames have been cut in to the show, leave the pieces separate.
3. Secure the ink code-ordered trims with a rubber band.
4. Roll the take's trims up on a flange and attach its trim tab.
5. Store trims and outs for a scene in the same or separate boxes — both systems are used. Outs will be heads out. Trims will be tails out.

When it's time to re-cut, unroll the trims, hang them on a pin, and place them in your Moviola.

FILING FLATBED TRIMS: RECONSTITUTING

You had two perfectly synced KEM rolls before cutting. Now you have two rolls of outs and tons of trims hanging in your trim bin. You need to reconstitute the KEM rolls, i.e. splice in the trims and put the rolls back in sync. Here's how:



9.b. Trims hung in trim bin.

¹ An outtake, commonly shortened to "out," is an unused take; not a frame of the take's picture or track was cut in to the show.

1. Use the ink code to splice all the pix and sound trims back in order on their KEM rolls.
2. Put the reels in the synchronizer and zero out your synchronizer at the start marks — just like you did when you built the rolls.
3. Wind down to the first take on the roll. The ink codes on pix and sound should line up, just as they did before the roll was cut in to the show.
4. Continue winding through the roll, making certain the ink codes line up. At a certain point the roll will go out of sync; the ink codes will no longer line up. Notice that either sound or picture is missing — it has been cut in to the show.
5. Splice in pix fill where pix is missing, sound fill where sound is missing, to put the roll back in sync.
6. Check your tail sync mark and wind back to heads and your start (head sync) mark. If you're in dead sync, congrats! You've reconstituted your first KEM roll.
7. Shelf the reconstituted rolls so they're ready for re-cutting.

REPRINTS AND RETRANSFERS

There are times, especially when cutting on a Moviola, when film gets thrashed so badly that the entire take must be replaced. Duplicate pix and sound are referred to as dupes. More specifically, a picture replacement is called a reprint; a track replacement is called a retransfer.

To order dupes, look no further than your codebook for the information. For a reprint, write down the following info for the lab: negative key code numbers at head and tail of the take, camera roll number, and date shot. Also, confirm that you want the same timing lights as before, e.g. Red-27, Green-25, Blue-24. This timing info is on the lab report that came with dailies. To order a retransfer, tell the sound transfer house the shot's scene and take number, its sound roll number, and the date it was recorded.

WHAT TO DO WITH THE REPRINT OR RETRANSFER

Mark and code the new take exactly like the old take. Start by putting both the damaged take and the new take in the synchronizer. Wind down and mark the slate on the new take. Then wind to where the first code number starts on the old take. Write the code number on the duplicate frame on the new take.

Hand-code the rest of the take yourself or spot-code it on the coding machine if it's too long. Either way, check it against the old take in the synchronizer to make sure you're frame on.

Cutting in the reprint

1. Make sure that every frame of the old take is out of the film, replaced by the new take. If not, you may cut a frame in twice. Duplicate picture frames are an issue with film that will affect cutting your negative (more about this in Stage III Part 2).
2. Reconstitute the old take, frame for frame. When it's completely reconstituted — not a frame is missing — throw it away.

3. If you want to keep the old take, put it in a box labeled “Dupe takes replaced by reprints.” Never use these takes unless the new replacement take is destroyed right before a screening and there is no time to get another reprint.

Cutting in the retransfer

Replace the mutilated track with the new, recoded track. That’s it! There’s no reason to replace all the old track in the cut. Nor do you need to reconstitute the old sound take. Contrary to picture, track can be used as many times as needed.

CUTTING IN REACTIONS AND MAKING OVERLAPS

Suppose you want to cut in a reaction or make an overlap; how would you go about this? Remember to always cut to the left of the synchronizer or KEM sound head so your cut reels stay in sync. Now read on.

CUTTING IN A REACTION, A.K.A. PICTURE CUTAWAY

Scenario: As X talks you want to see Y react and then cut back to X on camera. Here are the steps:

1. Cut X’s whole dialogue with picture.
Mark and cut after the last frame you want to see of X.
2. On Y’s shot: Mark and cut Y’s shot at the first frame you want to see of Y.
3. Splice Y’s shot to X’s shot.

Now you need to decide where to cut from Y back to X. There are two ways to decide. Pick either 4A or 4B. You will use the synchronizer’s gang or the flatbed’s second sound head to help you measure correctly.

4A. Y’s picture decides.

You want Y to finish reacting at a specific point and then cut back to X.

Mark the last frame you want to see of Y.

On Y: Measure from Y’s head splice to the last, marked frame of Y.

On X: Starting from X’s last frame, mark the same amount of frames on X as on Y.

4B. X’s picture and/or words decide.

You want to be on X for a critical line or look; where Y falls isn’t as important.

Mark the first frame you want to be back on X.

On X: Mark the last frame you see and the first frame you come back to.

5. On X: Cut out the frames between X’s marks.

On Y: Cut Y at its last, marked frame.

Make sure that the number of frames you cut out of X are the same number of frames that you cut in to Y.

6. Splice X to Y.

MAKING A PICTURE OVERLAP

Scenario: X talks and then Y talks but you want to see Y react before cutting to Y's dialogue. In other words, you want to cut to Y's picture before you cut to Y's sound; Y's picture overlaps X's sound. Follow these steps:

1. Make X's and Y's sound edit by cutting and splicing X's dialogue to Y's dialogue. Leave X's picture long and uncut. Run the edit to make sure the dialogue cut works.
2. Mark and cut X's picture where you want to start seeing Y. This will be before the sound cut.
3. Measure the difference between X's picture and sound cut in your synchronizer. Let's say it's 2 feet and 6 frames (2'6).
4. Mark Y's picture where Y's dialogue starts. This is your sync mark — where Y's picture is in sync with Y's track.
5. On Y's picture, roll 2'6 from this sync mark toward the head of Y's take. Mark and cut on this frame.
6. Splice Y to X. Run and check the overlap to make sure you like it and that X and Y are still in sync.
7. Adjust as necessary: Take a few frames off Y (or X) and be sure to add them back to X (or Y).

MAKING A SOUND OVERLAP

Scenario: Two sync shots:

Shot 1: Penguins in the snow making penguin chatter (sound).

Shot 2: Penguin expert talks on camera.

The picture edit is perfect but you wish to smooth the transition between the shots by overlapping sound. You will do this by lapping a few frames of penguin chatter over the picture of the expert before the expert speaks. Here's how:

1. As per usual when cutting, gang the tracks to keep them in sync with their pictures.
 - a) Moviola show: Put the film in the synchronizer:
 - Pix: 1st gang
 - Penguins' track: 2nd gang (with sound head)
 - Expert's track: 3rd gang (with sound head)
 - b) KEM show: Thread pix as usual and thread the two tracks through the first and second sound heads.
2. Make the picture cut between the penguins and the expert. Do not cut the tracks but make a mark on both tracks at the picture splice. This is your sync mark should you go out of sync.
3. Roll forward and make a second set of marks at the frame where the expert starts to speak on both tracks. It should be a few frames to the left of the picture splice mark.

4. Roll back so the second marks are to the left of the synchronizer or the sound head. Cut both tracks at the second set of marks and splice the penguins' track to the expert's track. The sound cut will be to the left of the picture cut. Play it: You should hear the penguins chatter when the picture cuts to the expert and stop chattering as the expert begins to speak.

CREATING AND CUTTING IN FILM EFFECTS

A film effect can be as simple as a fade-in or white-out or more complicated like a matte or CGI. Here are the steps:

- 1) Plan the effect and/or mark it in the cutting room.
- 2) Create the effect at the optical house, film lab, or at the post house.
- 3) Edit in the effect in the cutting room.

STEP 1: MARKING THE SIMPLE EFFECT: 35MM

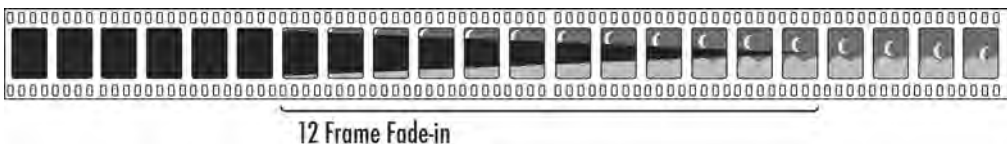
Once you've decided on the effect, grease-pencil it on the work print and fill out an optical count sheet with the effect's length, description, camera roll(s), and key codes to send to the optical house or film lab. Alternatively, you can send the marked work print or order a dupe and mark it, instead of the optical count sheet. In this scenario, you would slug the removed film in your reel with white leader to keep in sync since you're not removing any sound.

All of these effects require handles — extra frames at the head and/or tail of the shot. For example, as a shot fades out to black, the shot overlaps the black and then disappears as the black becomes fully visible. During the period of overlap, whether it overlaps to black (as during a fade-in or fade-out) or to another shot (as with a dissolve or super), you need to make sure that the shot has sufficient handle(s).

Here's how to mark the film for most common effects you will be ordering:

FADE-IN AND FADE-OUT

Fades are grease-penciled on the work print with two lines in a V shape to indicate the start and end of the fade.



On a fade-in, as evident in figure 9c, the open end of the V is where the shot starts in black so the black is full up. The point of the V is where the shot's picture is full up and there is no more black.

The opposite is true for the fade-out. As figure 9d shows, the point of the V is where the shot starts to fade out and the open end of the V is where the black is full up and there is no more shot.



12 Frame Fade-out

9.d.

DISSOLVE

Reading figure 9e from left to right, the start of the line at the left is where the outgoing shot starts to dissolve.



12 Frame Dissolve

9.e.

"C" is marked at the center point between the two shots — where they're both equally visible — above a line drawn straight through them. The end of the line at right is where the new, incoming shot is full frame, with none of the outgoing shot showing.

SUPER

Both shots are fully exposed together for the duration of the optical, as shown in figure 9f.



12 Frame Superimposition

9.f.

STEP 2: CREATING EFFECTS

Visual effects are just another way of creating film for me to cut. We're used to having the film shot on the set, processed and sent to the editing room and that's it. In the visual effects world, that's just the beginning of making the shot. Instead of the shot being made in one day, it might be made in anywhere from one month to one year. Visual effects are just a tool the same as making a decision to shoot with a Steadicam or on a dolly. . . . One of the nice things is that it allows post to be involved in creating the shot.

— Zach Staenberg, A.C.E., Feature and Television Editor, *Gotti*, *The Matrix* (all three films), and others

Film effects take two to seven days to make normally. They are achieved by one of three methods, depending on whether they're produced at an optical house, at a film lab, or on a computer at the post house.

OPTICAL HOUSE METHOD (35MM)

Opticals are effects made at an optical house on an optical printer from new negative. To start, the editor marks the work print, fills out an optical count sheet, and/or verbally confers with the house about what to do. Then an IP² is struck at the lab or the optical house. The IP is projected through the optical printer³ to create the optical on the new negative. From this new negative, a work print is made by the optical house or the lab and sent to the cutting room.

The majority of 35mm opticals are accomplished on an optical printer because it offers the widest latitude for making effects. For example, most fades and dissolves are a standard combination of feet and half-feet: 16 frames, 24 frames, 32 frames, etc. Optical printers can turn out 19-frame effects and other odd lengths.

FILM LAB METHOD, A.K.A. A/B ROLL METHOD (16MM AND 35MM)

The optical printer method is NG for 16mm because its splices become visible when its negative is turned into a positive print. Instead, 16mm effects are done at the film lab as the negative is processed during finishing, using the A/B roll method.

A/B rolling uses two synced rolls of negative — the A roll and the B roll — and checkerboards them to produce the effect. For instance, for a fade-in, the A roll would contain the OCN (original camera negative) of the shot that's being faded in and the B roll would contain the black for the fade. The lab runs the A and B rolls simultaneously and prints the effect to a third roll of film. A/B rolling is more expensive and easier than optical printing but more restrictive as to the length and spacing of dissolves.

COMPUTER OPTICALS (16MM AND 35MM)

With the current advent of computer graphics, anything you can imagine, from the gross to the extremely subtle, is available to you — for a price.

— Film Guy, from his book *Film Editing Nutz and Boltz*

CGI (computer-generated images) are increasing each year as movies and commercials become more effects-driven and the technology surpasses itself each year. *Toy Story* billed itself as the first totally computer-generated movie. Examples of CGI are mattes, 3D effects, morph effects (where an object, image, or person changes shape as in *The Matrix*), and complex effects of many layers like those on *Pirates of the Caribbean*, where shots contained the ship, people, skeletons, and the night sky.

² An IP (interpositive) is a positive print made from the negative on a contact printer. It sports an orange background and colors that are the reverse of the negative: white is black, red is green, etc. An IP is used to make opticals as well as the final release print.

³ An optical printer combines a projector and a camera to shoot an IP on negative raw stock and create the optical.

How CGI is made

The negative is scanned into the computer, so an IP is unnecessary. The effect is then created by manipulating the negative in the computer. People and shadows can be painted in or out, the sky can change color, twinkling lights can be added — the sky, er, the computer is the limit. Videotape images may be combined with the film image. When many layers are involved, much time and money is required to build CGI. On the plus side, unlike lab or optical house effects, computer effects can be screened at any stage along the way, so changes can be made and the final result is exactly as envisioned.

OTHER COMMON OPTICALS AND HOW THEY'RE CREATED

MOTION EFFECT

With a motion effect, the film is slowed down or sped up for dramatic or comic effect. A speedup on film is known as a *skip frame* or *step frame*, a slowdown as a *slo mo*. Both effects are achieved by rephotographing the negative frame by frame. For a slow mo, frames are repeated. On a speedup, every other frame or every third frame is dropped (skipped), giving a stepped look to the action; if a lot of frames are skipped, the effect is referred to as *pixilated*.

Changing the speed of the action affects the length of the shot. For example, if the shot shows a rabbit running around a tree, the rabbit will take longer to hop around if the shot is slo mo'd, shorter if the shot is sped up. Be sure to account for this duration change when you order the effect.

FREEZE FRAME

A freeze frame is processed similarly to a speed change; one frame of the negative is rephotographed repeatedly. The shot before the freeze frame should be optically duplicated also. This way both the shot and its freeze frame are from the same negative. They will appear to be a seamless match when printed and viewed.

FLIP AND FLOP

When you flip a shot, you turn it upside down, e.g. a man standing on his head is now standing on his feet. When you flop a shot, you change its position horizontally 180°. A couple of examples: 1) The coast is on the right when it used to be on the left; 2) Your heroine now looks from right to left instead of left to right. Flopping, the more common of the two effects, is often used for correcting shots with mismatched eyelines or POVs. These two effects are accomplished by splicing the film in flopped or flipped position and repeating this when the negative is cut. For a superior look, however, it's better to do these effects on the optical printer.

REVERSE

Reversing the action — so that a car squeals to a stop before hitting the baby instead of squealing backwards from the baby as shot — is achieved through the optical printer.

Always, when reversing a shot, beware of lettering on signs, cars, shirts, etc., as letters will read backwards.

STEP 3: EDITING IN THE EFFECT

When the optical arrives back in the cutting room, view it on the flatbed to make sure it's acceptable and get it approved. When an optical is rejected, the optical house or lab is notified and it is sent back or you store it in a box labeled "Optical Rejects." A new count sheet is then made if necessary and the optical is redone. It's not unusual to receive several trial opticals before one's acceptable.

Once approved, the optical is cut into the work print using key codes or by eye. Trims are stored in an optical trim box and the optical negative is sent to the negative cutter to be spliced into the show when the negative is cut.

BIG SHOWS: MANY OPTICALS

On movies like *Independence Day*, where there are many opticals, an optical supervisor with assistants coordinates the optical, often distributing the work to several optical houses. Since innovative effects demand multiple passes in order to perfect them, the supervisor will pick optical house(s) that do swift, inventive work. George Lucas built ILM (Industrial Light and Magic) for the purpose of creating all types of special effects. Its location in San Rafael, California, is secret, known only to those who work there.

SOUND WORK

The amount of sound work that can be done on Moviola and flatbed shows is limited by the number of tracks on the machines, which range from one to three. The production track (the dialogue track shot during production) is always the first track. Typically the second track holds secondary voice tracks: dialogue, narration, or scratch track. If there are no secondary voice tracks, then the second and third tracks are used for sound effects and music.

Even if you have only one track to work with, you're going to want to fill and fix bad sound and holes in the track in order to screen a smooth-sounding cut. To get started, mark and measure the bad sound frames. Then pick one of the following solutions:

1) Quick fix: Flop the track

To do this, cut out the bad sound, turn this piece of track 180°, and re-splice it in. Now when you play it there is not sound. If you have time later and if there's more than a foot of flopped track, fill the track (see below). When a motion effect is cut into the picture reel, the sync sound is lost. New sound will be created during the sound editing phase but until then, you'll want to flop the track or follow #2 or #3.

2) Alternative fix: Replace the track with fill

Simply replace the bad sound with fill, frame for frame. Sound editors create many reels of effects and dialogue. For every frame where there is no dialogue or effect, the sound editor cuts in fill to keep the reel in sync. The editor fills the track until the next piece of dialogue or effect comes along.

3) Best fix: Fill the track with ambient sound

You can also replace the bad sound with ambience (room tone). The two places to look for it are:

- a) In the unused, ambient parts of the sound take of the shot you're using. Before or after the slate is usually the most fruitful place. If that doesn't work, try other takes of the same show.
- b) On your sound roll marked "room tone." The room tone should have been transferred from the 1/4" Nagra sound tape to the mag along with dailies.

TIPS FOR KEEPING TRACKS IN SYNC

1. Always cut to the left of the synchronizer.
2. Make sync marks with a grease pencil to the left (tail) of the sound cue.
3. Use fill that's already part of your soundtrack.

For example, let's say you've slipped a music cue down 20 frames so that now it starts 20 frames later. The solution is to cut out 20 frames of fill after the music cue. Then add those 20 frames of fill before the music cue. Since you're not adding any new footage, just moving what was already in the track, the entire track remains in sync. These pieces of fill serve to remind you of what you've done. This may sound elementary but beware! It's easy to get confounded being creative and mundanely practical at the same time.

TEMP MIX

In order to preview your film or show it to a prospective distributor, you will probably put it through a temp mix. We are all so attuned to well-edited sound that your viewers most likely will pick up on deficient sound. So do what needs to be done in terms of dialogue work, fill, effects, and music to make your show sound the best.

PREVIEWING YOUR CUT

You will be screening your film via a projector in a theater to the director, producer, distributor, preview audience, or other relevant viewer. In general, feature films are still previewed on film, but increasingly they're being projected on tape or sometimes right off the digital editing system itself. In the future, if digital theaters continue to emerge, previews will be run from a file on the server. For now, you're running on film. Here are nine ways to ensure that your show plays best:

1) Add music, effects, and voiceover

Do a temp mix if possible. The hard drive tracks will be transferred to a six-track fullcoat mag film in order to play in the theater.

2) Balance or rebalance the reels

Balancing reels? Sounds like an acrobatic act. Actually it means making sure the reel is the proper length for projection. For studio projection, each reel must run 11 minutes or less, which rounds off to 1,000 ft. in 35mm and 400 ft. in 16mm. When deciding where to break reels, break between scenes and not in the middle of dissolves or other effects.

You rebalance every time you re-cut. Why? Because during the re-cut, scenes were dropped, changed, and moved around and the show got shorter (most likely) or longer. Now some reels are too short, which means several reels will need to be rebalanced. Let's say two scenes were truncated on Reel 3 and one scene was dropped altogether, leaving it 498 ft. long. To rebalance Reel 3, move the first scene or two at the head of Reel 4 to the tail of Reel 3. This may have a domino effect as now Reels 4, 5, 6, and the rest need to be rebalanced. This is normal. You may go from 16 reels on your first cut to 13 by the fifth.

3) Make up a continuity sheet for each reel

Each screening requires a new continuity list as scenes are moved around, dropped, or added during re-cutting and reels are rebalanced.

4) Know the running time of your show

If you're screening a re-cut, know how much time has been lost or gained since the last cut.

5) Back-splice

A lot of people back-splice, a.k.a. double back, every splice on the picture reel (not track, as it would block out the sound). To back-splice, add a two-sprocket splice on the reverse side of every normal, four-sprocket splice. Back-splicing makes the film durable and flexible enough to be pulled through the projector.

6) Clean the film

Wipe grease-pencil marks off all pix and track reels. Dip a Webril wipe or soft, lint-free cloth in film cleaner to further clean the picture reels. Don't use a Webril wipe on sound: It will disintegrate the track! After the pix is Webril-wiped and dry, run each reel — both pix and sound—slowly through a velvet⁴ (see figure 9g).



9.g. *Velveting the picture for a screening.*

⁴ A square of black velvet cloth that film editorial supply houses carry.

7) Attach projection leaders

To prepare edited reels for projection at screenings or previews, attach SMPTE or Academy leader (as in the Motion Picture Academy, which hands out the Oscars). This is the countdown leader, which counts down from eight to two, that the projectionist uses to thread the projector. Here are the steps:

1. Put Reel 1 pix and track in the synchronizer, zero it out after the head label, and add 10 feet of lightstruck leader to both reels. This leader is for threading the projector.
2. Splice the Academy leader to the pix reel. You don't attach Academy leader to your sound reel because it's meant to be seen and is expensive. Instead, continue adding lightstruck leader to the sound reel to keep pix and track in sync.
3. Rolling both reels in sync, wind to the start mark on the Academy leader. Mark the frame on the sound leader with a start mark and label it "Academy Start." The projectionist depends on these start marks to thread up the reels.
4. Wind down to the #2 frame (there's only one) on the Academy countdown leader. Splice in a sync pop on the sound reel at the #2. The sync pop is often called the 2-pop because it is heard when the #2 runs.

Since Academy leader is 12'0 (4'32 on 16mm), altogether you will add 11'15 length of sound leader (4'31 on 16mm), and cut in a frame of sync pop to make an even 12'0 (4'32 on 16mm).

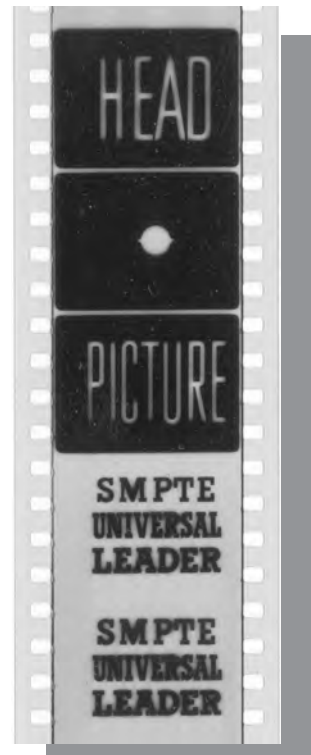
5. Splice the Academy leader to the FFOA on the pix reel and the corresponding frame on the sound leader to the head of the track reel. Since you will be removing these leaders after the screening, make a Sharpie mark across the splice line at FFOA on both pix and track so the splice will be easy to locate.

Repeat these five steps for every pair of reels.

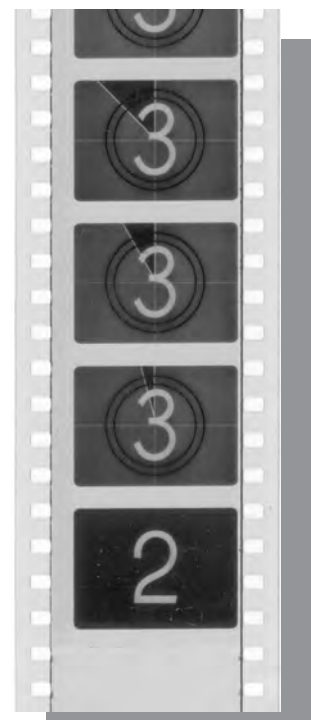
Interlock projectors

Using the Academy start marks, the projectionist threads up and interlocks a pair of reels so they run in dead sync. Hence the name interlock projector.⁵

⁵ Interlock projectors are only used for screenings during editing. Commercial theater projectors run a single reel because release prints contain picture and track on each reel.



9.h. Academy leader.



9.i. Countdown leader with two-pop frame.

Actually a screening requires two interlock projectors so that the projectionist doesn't have to stop the show after each reel to thread up the next reel. Before the screening starts, the projectionist threads up pix and sound for Reel 1 on the first projector and pix and sound for Reel 2 on the second projector. The screening begins and Reel 1 runs through the projector. Just before it runs out, the projectionist changes over to Reel 2 on the second projector. Once the changeover has been made and Reel 2 is running smoothly, the projectionist removes Reel 1 and rewinds it on the electric rewind while threading up Reel 3 on the first projector.

8) Put in changeover cue marks

Changeover cues, a.k.a. cue marks, signal the projectionist to change over from one projector to the other. To make a cue mark, grease-pencil a slash or dot on four consecutive frames. Some editors and projectionists use slashes to signal the time to open or close the curtain and dots to signal the actual changeover.

There are two sets of cue marks:

- a) The first set of marks — the motor cue — is marked 12'08 from LFOA.
At the first cue, the projectionist starts the second projector's motor and the film begins to be pulled through the projector.
- b) The second set of marks — the changeover cue — is marked 1'08 from LFOA.
The projectionist pushes the electric dowser on the first projector. This shifts the picture being played from the first projector to the second.

9) Get the reels to the projection booth ahead of time

This gives the projectionist time to check the reels for sync, changeover cues, and sound. Leave your number in case there are any problems. If you're screening a preview at a commercial theater, getting there early gives you time to do a test run and make sure for yourself that sound, sync, and everything else is in order.

AFTER THE SCREENING: RE-CUTTING AND LOCKING THE SHOW

During the re-cutting phase, it's imperative that trims be filed daily and meticulously so that they can be quickly accessed should the director want to delve into them. Frequently during re-cutting, you will cut out sections, scenes, or parts of scenes. When you do remove such a section, you will have a series of shots spliced together. This is called a lift.

Normally it's not wise to reconstitute a lift because you never know when the scene will go back into the show. It's better to roll up picture and track and label them, e.g. "Lift 1, Scene 68" on the trim tab and box. This way, should the lift go back into the show, it's easy to drop in. Time permitting, a lift log is created so lifts can be readily located.

**MOVING SCENES AROUND: CONTINUITY CHANGES**

Regularly during re-cutting, scenes are moved before or after other scenes. Just as often, a scene is cut in half and another scene or two is sandwiched in between. This shuffling calls for a new continuity sheet and often for reel rebalancing.

PUTTING IT BACK THE WAY YOU HAD IT

There are times after you've re-cut a scene when you'll be told "Put it back the way you had it." The big challenge here is to remember how you had it! With film, unlike with digital editing systems, there is no saving of versions; there is only the present version. (Duping a scene is expensive and hence only done for opticals.) To return a scene to its former state, you'll have to undo the current splices and root through the trim and shot boxes on the rack for extensions and shots that you originally had cut in to the scene.

FINE CUTTING AND LOCKING

As you get close to the final cut, you start to *fine cut*. Fine cutting means you're not making major changes, you're mostly just trimming and extending; the picture has reached a point where everyone is satisfied that it's the best that it can be, so you're just polishing the marble. (Hopefully it's marble!) Whatever the quality of your film, eventually you'll be told "It's a lock" and you will make your last splice.

 **CHAPTER WRAP-UP**

With picture lock, you've completed Stage II and the editing phase of postproduction. Appendix I contains the form if you want to make out your budget for editing. Otherwise, it's time to enter Stage III: sound editing and finishing.

APPENDIX I

STAGE II: BUDGET FOR EDITING

Now that you understand how to edit your project on film, tape, and video, you can budget for this stage of postproduction.

BUDGET FOR EDITING						
Acct#	Description	Amount	Units	x	Rate	Total
4000	Reprints and Retransfers					
4001	Picture reprints		feet			
4002	Sound retransfers		feet			
			Total for category			
4100	Narration/VO		hour			
			Total for category			
4200	Special Effects					
4201	Standard opticals		allow			
4202	Special opticals		allow			
4203	Film morph effects		allow			
4204	Matte shots		allow			
4205	Roto shots		allow			
4206	CGI		allow			
4207	Lab, stock, and transfer		allow			
4208	Misc.		allow			
			Total for category			
4300	Stock Footage		allow			
4301	Stock footage		allow			
4302	Stock footage — search		hour			
			Total for category			
4400	Additional Footage		allow			
4401	Pickup shots		allow			
4402	Insert shots		allow			
4403	Retakes		allow			
4404	B Neg		allow			
4405	Lab and transfer costs		hour			
			Total for category			
4500	Picture Dupes for Sound		feet			
			Total for category			
4600	Temp Mix		allow			
			Total for category			
4700	Screenings and Preview					
4701	Preview theater		allow			
4702	Screening room		Allow			
4703	Projectionist		hour			
			Total for category			
4800	Screening Tapes					
4801	Tape stock		tape			
4802	Dubs (1/2" viewing tapes)		hour			
			Total for category			
			GRAND TOTAL			