

INTEGRATING SOUND & VISION

Tutorial 1 - An introduction to Soundtrack Tools by 2b Royalty Free

Control Freak?

Wouldn't it be great if you could have complete control over the music in your production, without paying a composer hundreds (or thousands) of pounds to score accurately to the visuals? Imagine being able to change the mood at will, or bring in the drums at precisely the right moment to captivate your audience.

There are now a number of software programs that allow this kind of flexibility, but the *Soundtrack Tools*, supplied on the 'Designer Soundscapes' audio CD from 2b Royalty Free, have been created for use directly within your editing software, meaning you can build your soundtrack as you edit your sequence, totally integrating sound and vision.

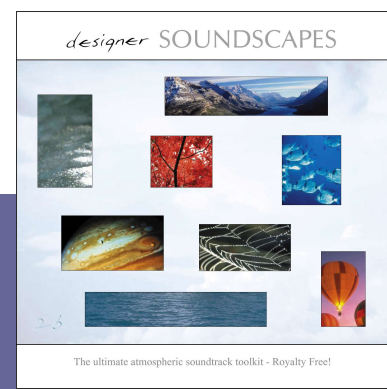
Designer Soundscapes features over 50 *Soundtrack Tools*, along with 16 original soundscape compositions which are ready to use in your production.

This tutorial aims to demonstrate the power of the *Soundtrack Tools* section of the disc by giving you a small selection to play with. It was built using Final Cut Pro 4 (FCP) but the techniques involved can easily be applied to other editing software.

Before We Begin

You should be able to use any video or audio editing application that supports Quicktime movies. The only requirement for using the *Soundtrack Tools* is that your software supports multiple (stereo) audio tracks, and the more the better! This tutorial will need six stereo tracks.

You can work around any limitations on the number of audio tracks available in your software by rendering an audio mix each time you run out of room. You can then remove the existing audio parts and replace them with your 'bounced' stereo track. Failing that just read along and use some of the ideas to create your own version.



Designer Baby...

The idea for the Soundtrack Tools section on 'Designer Soundscapes' was conceived when composer Colin Willsher began scoring a documentary called 'Science Of Waves' (produced by Granada Media for National Geographic).

With a tight budget and even tighter deadlines, the producer advised that there would be very little time between the rough cut and the final edit to make any changes to the music.

So Colin proposed that while much of the music could be written in advance (using the programme brief, a draft script and whatever rushes and raw footage they could get together) he could also provide additional layers and spot effects which could be moved around during the fine cut, giving the viewer the impression that the music had been specially composed to picture.

This proved to be a perfect solution for this production, with the soundtrack punctuating huge tsunami waves with sub-frame precision.

Thus a royalty-free music album was born...

Getting Started

- Copy the folder '2b Tutorial 1' to your hard disk (preferably one separate from your system disk and dedicated to audio/video) then open your preferred editing application. Create a new project and import the '2b Tutorial-Resources' folder so that all of the audio and video files become available in the Browser or Clip window.
- Drag the Quicktime file '2b Tutorial1.mov' to the timeline and ensure that the first frame is at timecode location 01:00:00:00 - I'll be referring to timecode throughout the tutorial for accurate placement of the audio elements. Don't forget to render new additions to the timeline as and when required.
- First let's take a look at the completed tutorial soundtrack. Grab '2b Tutorial.wav' from the Browser and place it at 01:00:00:00 on a new audio track, then playback from the top of the sequence. The following steps will take you through the re-construction of my arrangement, but feel free to experiment with the material available.

Phase 1: Marking Hit-Points

Start by removing the completed soundtrack so you have a blank audio canvas.

It's then a good idea to identify key frames in the video that you want to 'hit' with sound effects or changes in the music.

Adding markers at these 'hit-points' will allow us to synchronise the music and effects with ease later in the tutorial.

Normally you can do this as you build up the edit, but as we already have pictures to work to I'll talk you through the ones I selected.

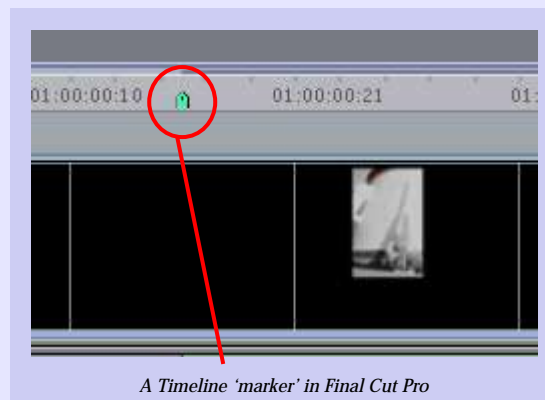
To add a marker in FCP, move the playhead to the desired frame in the Timeline and press < M > on the keyboard.

Click Here

to visit 2b-royaltyfree.com where you can purchase online and find full track listings, reviews and CD previews.

Using the above method add markers for the following hit-points:

Marker Name/Number:	Timecode Position:	Shot Description:
Marker 1	01:00:00:15	First image of space shuttle
Marker 2	01:00:05:16	End of build up to launch
Marker 3	01:00:07:10	Launch start
Marker 4	01:00:09:02	Launch tower release 1
Marker 5	01:00:10:19	Launch tower release 2
Marker 6	01:00:12:05	Thrusters
Marker 7	01:00:13:10	Launch (overhead cam)
Marker 8	01:00:18:09	Launch (distant cam)
Marker 9	01:00:24:22	Cockpit
Marker 10	01:00:30:13	Inflight transition
Marker 11	01:00:38:05	Jettison fuel tanks
Marker 12	01:00:47:02	Begin fade



A Timeline 'marker' in Final Cut Pro

Phase 2: 'Spotting' Sound Effects

STEP 1 I like to make some quick progress by spotting the key sound effects first.

Make sure 'Snapping' is turned on in the View menu and drag the track 'Atomic' from the Browser directly to the Timeline so that it snaps to Marker 4.

Reduce the gain for this effect by double-clicking on the audio clip and entering a Level value of -9 dB in the Viewer.

Render the audio by pressing < Alt+ R > and playback to check that it syncs with the pictures.



The audio Level control in FCP's Viewer window.

STEP 2 Now snap these sound effects to the appropriate markers in the Timeline.

If they overlap with previous effects you'll need to 'superimpose' them on a new stereo audio track. If you're really short of tracks you could try applying an audio fade out to the previous effect.

Audio Effect:	Snap To:	Gain/Level Setting
Dark Impact	Marker 5	-3 dB
Deep End	Marker 6	-4 dB
Atomic	Marker 11	-9 dB

On The Level

■ An important consideration when layering sound in this way is that you leave enough headroom on your system's audio outputs.

Building up track after track will very soon create distortion, so make sure you reduce the level of the first few parts you put down and mix to those.

When complete you can then adjust all the levels upwards (using Modify > Audio > Gain, in FCP) to achieve maximum output level.

Suggested audio levels for this tutorial soundtrack are provided throughout.

STEP 3 So far, the effects we've used have started with hard transients, making them easy to snap into place, however slowly evolving sounds require an additional edit procedure to put them into precise position.

'Wormhole' is a reverse effect which I've used in two locations as a build-up to the launch. In order to snap the climax of each occurrence to our specified hit-points:

Double-click on 'Wormhole' in the Browser to open it in the Viewer. Place the playhead at the loudest point in the waveform (7 seconds:12 frames in). Hit < M > and a marker will be placed within the audio file.

Now drag the file to the Timeline and trim the start point a little to the right so that you have some room to move it backwards into position.

Drag the marker on the audio clip so that it snaps into position at Marker 2 on the Timeline. You can then trim the start point back to the first marker (suggested level for this part is -4 dB).

As the clip now starts in the middle of the sound it's advisable to use the pen tool to draw a short fade in, so as to avoid unwanted clicks.



'Wormhole' in position on the Timeline. Notice the pink marker in the audio clip.

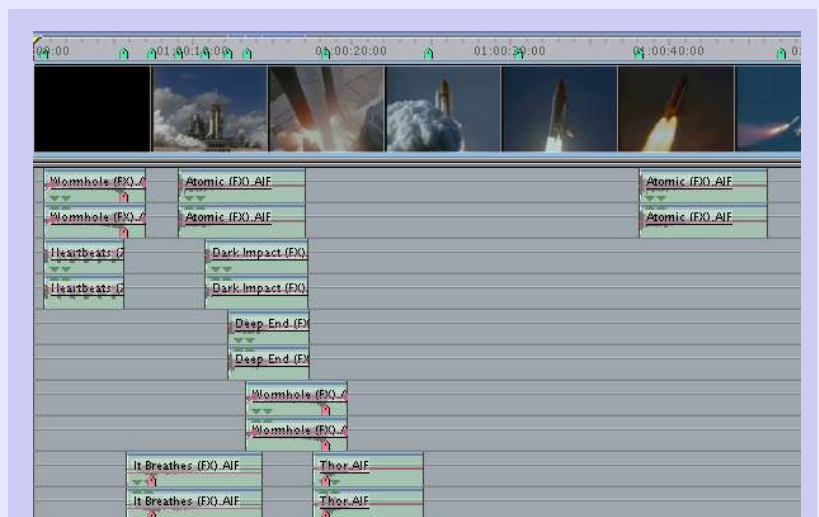
STEP 4 To create the second occurrence of 'Wormhole', simply copy and paste the first clip on the Timeline, so that the copy's audio marker snaps to Marker 8. You'll need a new track for this.

STEP 5 Similarly, find the loudest point in 'Thor'. Set the marker and snap it to the same point on the timeline (Gain -4 dB). Now we're beginning to see how well these tracks can combine to punctuate your hit-points!

STEP 6 Do the same again with 'It Breathes' whose marker should sit quite happily at Marker 3, with a gain of -14 dB.

STEP 7 To add to the suspense on the opening build, we'll use 'Heartbeats'. This track starts at 70 bpm and speeds up towards the end to increase the tension.

We only need the first six beats, so place it on a new track at Marker 1 and then trim the end point back to Marker 2, where happily, there's a clean out point.



With your key sound effects in place, your Timeline should now look something like this.

Phase 3: Building a soundscape using Layers & Drones

STEP 1 A simple music bed will underpin the whole project.

Slot the file 'Ominous' straight onto the timeline with its start point at Marker 2 (Gain -5 dB).

Rather than using one track throughout the sequence, I've changed the mood slightly at the shuttle launch.

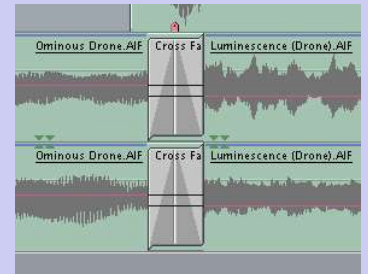
To prepare for this change, drag the out point of 'Ominous' back to Marker 8.

STEP 2 Now put 'Luminescence' on the same track at Marker 8 (Gain -11 dB).

A cross-fade between the two clips will help the transition but to make this possible we'll need to trim the In-point half a second to the right, then move the clip back to Marker 8.

Now, take a Cross-Fade (from the Audio Transitions folder in the Effects tab within the Browser), setting the duration to 1 second.

When done trim the out point to the very end of the video.



Because the Soundtrack Tools have been created in closely related musical keys, a short Cross-Fade between parts is all that's required to change the mood or extend the soundtrack.

STEP 3 Let's add another layer to the soundscape.

Take 'Super Sub' and bring it in at Marker 9 (Gain -7).

Again, trim the out point to the end of the video.

STEP 4 You could go on building the music up in this way using contrasting layers, but I've just added one extra morsel of sonic interest.

Place 'Feedback' on a new track at Marker 10 (Gain -10 dB). This track has a good deal of movement and here I've used

it more as an effect.

Trim the end point to Marker 11 and use the pen tool to create short fades at both ends of the clip.

Phase 4: Injecting pace using Rhythm Beds

STEP 1 And so to the final musical building blocks - Rhythm Beds.

We're going to use the 70 bpm track 'Extra Large', so bring the file onto the timeline towards the end of the sequence.

All we need is the last two bars and the ending, so double-click to open the Viewer and move the playhead to 23 seconds and 24 frames into the clip.



Fire away! Punctuate your visuals with rhythm as well as sound effects.

Press < I > to mark the new In-point of the clip and, while we're here, let's add a marker on the last beat as this will be useful later.

Place the edited clip with its In-point at Marker 11 on the Timeline and set the Level to -12 dB.

This works really nicely in accentuating the Jettison shot.

STEP 2 Our last audio clip will be 'Filter-E'.

At 140 bpm, this layer runs at double the tempo of the previous rhythm track and so should play exactly in time.

As before, open the file in the Viewer and add an audio marker on the last beat.

Once on the Timeline drag this marker in

line with the audio marker in 'Extra Large' so that both rhythm loops finish together.

Now adjust the gain to -15 dB, but this time trim the In-point to Marker 9.

Despite our 'Sound Advice' (see box), in this context it won't appear out of place to simply fade up the 'Filter-E' rhythm track, so do that now.

Sound Advice

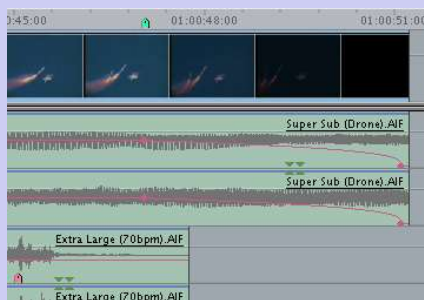
- It's good practice, when editing full music tracks, to take the beginning and ending of a track, adjust them to a length that will fit your video and then find a place to splice them together seamlessly - and preferably where it makes musical sense.
- Designer Soundscapes* features a number of 30 second 'developing' rhythms, complete with endings and at a selection of tempos. By slicing them up into shorter bar lengths, you can then cut, paste and reassemble them to accompany longer sequences.
- It's worth experimenting with loops from mathematically related tempos, as you'll sometimes have a pleasant surprise. However, even loops of the same tempo won't always work together, as the *feel* or *groove* may be quite different.

Phase 5: Finishing Lines

The last thing to do is tidy up the end of the music sequence.

Use the pen tool to draw fade outs on all of the sustained layers (not the rhythm tracks).

You can use Marker 12 as a start point, so that your audio fade out closely matches that of the video.



Tidying up with fade-outs.

We Have Touchdown!

And there you have it. A visual sequence truly enhanced by the tight integration of audio layers, in a way that slapping on an 'off the shelf' track could rarely achieve.

Now imagine the possibilities if you were to begin treating and mangling individual layers with all those creative tools in your software's audio arsenal...

Further Information

The *Designer Soundscapes* audio CD is available now from our online shop. Click this link, or visit www.2b-royaltyfree.com for further information.

The NASA footage used in this tutorial is from the *Videotraxx Film & Video Library* by Digital Juice, reproduced with the kind permission of Holdan Ltd.

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