Making Movies with Animation Export

When it comes to having nerdy fun, exporting movie animations of your SketchUp models is right up there with Pokémon GO and store-bought fireworks. Like both these things, what's so great about animation export is how *easy* it is to do.

That's not to say that animation and digital video are simple topics — they're not. It'd take a freight elevator to move the books that have been written about working with video on the computer, but in this section, we keep it simple. What you find here is only what you need to know in order to export an animation of a 3D SketchUp model.

Getting ready for prime time

The key to exporting animations of your SketchUp models is using scenes; if you haven't read it already, now's the time to check out Chapter 11. *Scenes* are saved views of your model that you can arrange in any order you want. When you export an animation, SketchUp strings together the scenes in your model to create a movie file that can be played on just about any computer made in the last several years.

Follow these steps to get your model ready to export as an animation:

1. **Create scenes (as described in Chapter 11) to build the "skeleton" of your animation.**
2. **To adjust the animation settings in the Model Info dialog box, choose Window ⇒ Model Info and then select the Animation panel.**

   Chapter 11 explains all the controls; see the section about moving from scene to scene.
3. **Select the Enable Scene Transitions check box to tell SketchUp to move smoothly from one scene to the next.**
4. **Enter a transition time to tell SketchUp how long to spend moving between scenes.**

   If your Scene Delay is 0 (below), you can multiply your transition time by your number of scenes to figure out how long your exported animation will be.
5. **Enter a scene delay time to pause at each scene before moving on to the next one.**

   

   TIP If you plan to talk about each scene, use the scene delay time to pause before each one. If your animation is supposed to be a smooth walkthrough or flyover, set this to 0.
6. **Adjust the proportions of your modeling window to approximate the proportions of your movie.**

   Unlike SketchUp's 2D export formats, the proportions of your exported movie don't depend on those of your modeling window; that is to say, making your modeling window long and skinny won't result in a long and skinny movie. You choose how many pixels wide and tall you want

your movie to be, so to get an idea of how much you'll be able to see, make your modeling window match the proportions of your exported file. (The 16:9 aspect ratio is common for video formats.) Have a look at Step 1 in the section "Exporting a raster image from SketchUp," earlier in this chapter, for guidance on adjusting your modeling window.

7. **When your project is ready to go, move on to the next section to export your animation.**

Exporting a movie

SketchUp offers a veritable alphabet soup of video export formats: You can choose from seven on Windows and six on Mac. The list can seem daunting, so here's a cheat sheet that should save you some mental anguish:

- **H.264 (`.mp4`):** This video format is as close to an industry standard as it gets. Everyone with a Mac and anyone with QuickTime on her Windows computer can readily view H.264 movies without any hassle. It's also the upload format of choice for popular video-sharing websites like YouTube and Vimeo. SketchUp's exported H.264 files are nicely compressed, which keeps them smallish and good-looking.
- **AVI (`.avi`):** All Windows machines and Macs with a special plugin can play AVI movies. Popular video-sharing websites like YouTube and Vimeo let you upload AVI files, but they tend to prefer H.264. SketchUp's exported AVI animations are *uncompressed*, meaning that they look nice and clean but the files can get huge quickly. If you're planning to send someone your movie file, AVI might not be your best choice.
- **VP8 (`.webm`):** Not too many years ago, the tech world started getting nervous about H.264's dominance as a file format used to display video on websites. H.264 is *proprietary*, meaning that big companies have to pay licensing fees to its owner (Apple) if they want to use it. WebM is a free alternative, backed by Google, and made for use on websites that use HTML5. Translation: You don't need to worry about WebM unless you're planning to embed your movie on a modern website *without* first uploading it to YouTube or Vimeo.
- **Theora (`.ogv`):** Theora is another free, open source format meant for videos that will be embedded on websites. Unlike WebM, Theora is managed by an independent foundation that tries to keep important multimedia file formats out of the hands of big, private corporations like Apple (H.264) and Google (WebM).
- **JPEG, PNG and TIFF:** Choosing to export in any of these formats won't give you a movie file that you can watch — they aren't video file formats. Instead, you'll get a pile of image files that each represent one frame in your animation; for a 3-second video at 30 frames per second, SketchUp would export 90 individual images. These options are useful for serious video editors who need lots of control, but most folks shouldn't need to use them.

Although exporting animations in SketchUp is a pretty simple operation, figuring out how to set all the animation export controls can seem like landing the space shuttle.

Follow these steps to export a movie file from SketchUp:

1. **Prepare your model for export as an animation.**

   See the section "Getting ready for prime time," earlier in this chapter, for a list of things you need to do before you export an animation.

2. **Choose File ⇒ Export ⇒ Animation ⇒ Video.**

   Choosing Video provides you with file formats that yield video files. If you pick Image Set instead, you'll see options for creating sets of still images. We explain the difference between these a little later on in this section. If you're on a Mac, there's no bifurcation of the Animation submenu; just choose File ⇒ Export ⇒ Animation, and you see all your format choices.

3. **Give your movie file a name and then choose where to save it on your computer system.**

4. **Make sure that the correct file format is selected.**

   From the Format drop-down list, select the file format you want SketchUp to export. In most cases, this is either H.264 or AVI, but take a look at the descriptions earlier in this section for more detailed info.

5. **Click the Options button to open the Animation Export Options dialog box.**

6. **Adjust the settings for the type of animation you want to export. (See Figure 13-6.)**

   How you set up everything in this dialog box depends on how you plan to use the animation you create. Check out the next section in this chapter for a list of settings and their implications.

7. **Click OK in the Export Options dialog box.**

   You return to the Animation Export dialog box.

8. **Check to make sure that everything looks right and then click the Export button.**

   Because exporting an animation takes a while, it pays to double-check your settings before you click the Export button. When the export is complete, you can find your animation file in the location you specified in Step 3. Double-clicking the file causes it to open in whatever movie-playing software you have that can read it.

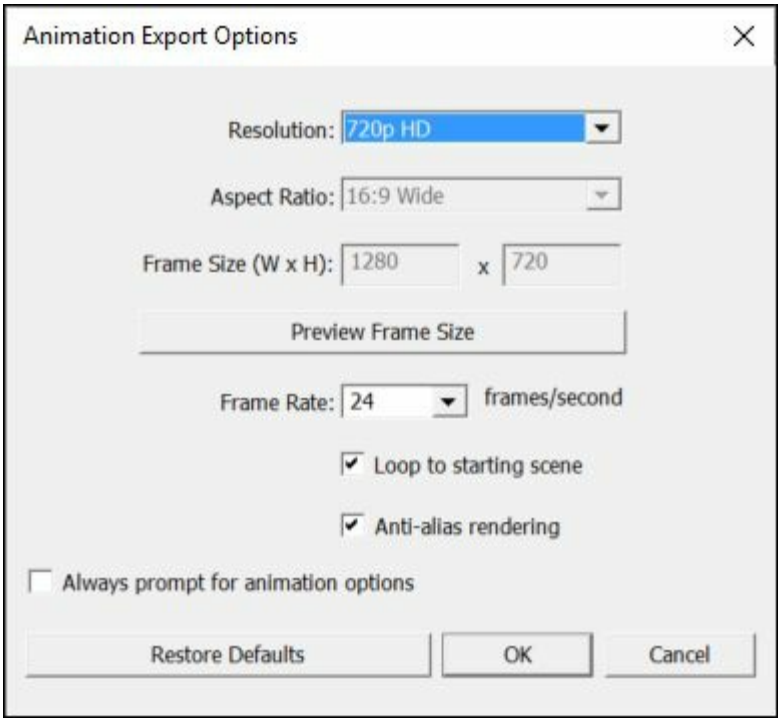

FIGURE 13-6: The Animation Export Options dialog box.

Figuring out the Animation Export Options settings

As we say earlier, digital video can be complicated. Lucky for you, you don't really have to know exactly what everything means to export the right kind of movie; you just have to know how to set up everything. The Animation Export Options dialog box (shown in Figure 13-6) is the same for each of the video file formats that SketchUp offers; here's a brief guide to the settings:

- **Resolution:** This use of the word *resolution* refers to the pixel dimensions — the physical size — of your video. SketchUp Make (the free version) lets you choose from three standard sizes, whereas SketchUp Pro provides a Custom option for more flexibility. Here's what the terms mean:
    - *1080p Full HD* yields a video that is 1920 pixels wide and 1080 pixels high. This is the highest resolution that most newer televisions can display, and it's even higher than a lot of laptops can handle natively. Choose this option only if you know you'll need it; exporting this many pixels takes a long time.
    - *720p HD*, which is 1280 pixels wide by 720 pixels high, is the most common resolution for high-quality exported video. This size looks good on computer screens and televisions, and it's the recommended upload resolution for YouTube and Vimeo. Chances are good that this is the resolution for you.
    - *480p SD*, at only 854 pixels wide by 480 pixels high, will probably look small on most computer screens. This is the resolution used for DVDs, which every 16-year-old knows are weird artifacts from the distant past. (Aidan has a huge collection, unfortunately.) Use 480p if file size is a concern.

- *Custom* is available only if you're using the Pro version of SketchUp. Choosing this option "unlocks" settings for Aspect Ratio and Frame Size, which we describe later in this list.

- **Aspect Ratio:** This refers to the proportions of your video frame; the first name refers to the width and the second to the height. Common aspect ratios for film and video are 16:9 (which is wide) and 4:3 (which is more square). If you're using SketchUp Pro, you can choose Custom and put whatever you want into the Frame Size fields below this setting.
- **Frame Size:** Pro users can pick their own video frame dimensions. Go nuts, big spender.
- **Preview Frame Size:** This is actually an incredibly handy button. Click it to see a green box preview of how big your video will look on your screen. Click the preview to make it go away when you're done.
- **Frame Rate:** Different video technologies use different frame rates. Using more frames/second (fps) results in smoother motion but bigger files and longer processing times. Generally speaking, 30 fps is a good sweet spot. If you're worried about big files, try 15 fps and see how that looks.
- **Restore Defaults:** Replaces your hard drive's contents with a looping, 8-second video montage of Keanu Reaves's greatest cinematic moments. Just making sure you're still paying attention — this button puts everything in Export Options back the way it was before you started messing around.
- **Loop to Starting Scene:** Automatically ends your video on the scene you started with, rather than the last scene in the sequence. This option is handy if you want your movie to end exactly how it started.
- **Anti-alias Rendering:** Choosing this doubles the amount of time it takes for your animation to export, but it makes your edges look much smoother in the final movie. You'll almost certainly want to select this option.
- **Transparent Background (Mac only):** If you're planning to use your exported movie with advanced video editing software, this is something that might interest you. Otherwise, you should probably leave this option deselected.
- **Always Prompt for Animation Options (Windows only):** Select this to force SketchUp to show you the Animation Export Options dialog box every time you export a movie.

Exporting a CAD File

AutoCAD and other CAD-based software are popular among architects, engineers, and anyone who needs to build or make super-precise stuff. Although some professionals have totally replaced AutoCAD-based workflows with SketchUp and LayOut, others still use AutoCAD.

If you ever need to export a SketchUp model to a DWG file that works with CAD-based software, SketchUp Pro has the inner workings to translate your SKP file into a DWG file. (You cannot export a CAD file from SketchUp Make; you have to plunk down the money for Pro.) Because the SKP-to-DWG process is fairly advanced, this section mostly gives you a high-level overview of the export process so that you have a basic understanding of how it works.

Preparing your file

First, a few tasks can produce a cleaner exported file. Here's how to prepare your file before you export it as a DWG file:

- **Check your units.** If the unit format (inches or decimals, for example) of your SketchUp file matches the desired units for the DWG file, the export process goes much more smoothly. To check your model's units, choose Window ⇒ Model Info and select the Units pane on the left.
- **Turn off problematic styles.** Line styles that use endpoints or extensions don't always translate well in the export process. If you have problems with endpoints or extensions in you exported file, try turning them off. You turn off the line styles on the Edit tab of the Styles panel. See Chapter 10 for details.
- **Set your view.** If you're exporting a 2D DWG file, you're likely exporting a floor plan that may need to reflect a specific scale. If that's the case, make sure the model is in Parallel Projection view (choose Camera ⇒ Parallel Projection) and uses one of the standard views, such as Top or Front. (Any standard view but Iso is okay.)

Keep in mind that SketchUp layers may not translate directly to CAD layers.

Exporting a 2D DWG file

To export a SketchUp model as a 2D CAD file, follow these steps:

1. **Prepare your file, as explained in the preceding section.**

   We don't want you to miss those tips.

2. **Choose File ⇒ Export ⇒ 2D Graphic.**
3. **In the export dialog box that appears, choose to export your file as a DWG file. Then click the Options button.**

4. **Choose your desired options.**

   The Drawing Scale and Size section enables you to choose scale options. If your model uses profile lines (See Chapter 10), then you can select options here that export the profile lines as CAD polylines and customize the line width if you like. The Separate on a Layer check box, when selected, places profile lines or section cut lines on a separate layer.

5. **Click OK in the Export Options dialog box. Then click the Export button.**

   Depending on how big your SketchUp file is, this process can take a while.

Exporting a 3D DWG file

When you export a SketchUp file to 3D DWG file, you can select what entities you want to export. For example, you may want to export only edges and leave out faces, dimensions, and text. Follow these steps to export your SketchUp model to a 3D DWG file:

1. **Remember to prepare your file, as explained at the beginning of this section.**
2. **Choose File ⇒ Export ⇒ 3D Model.**
3. **In the Export Model dialog box that appears, select the DWG file type.**
4. **Click the Options button to select what entities you want to export. When you're done, click OK.**
5. **Click the Export button.**

   SketchUp's gears start converting your file into a CAD-friendly format.