Chapter 1

Introducing GIANTS Editor

In This Chapter

▶ Understanding the GIANTS Editor interface

▶ Opening 3D objects and scenes in the editor

▶ Moving around within a 3D scene in GIANTS Editor

▶ Moving, rotating, and scaling objects

*A*ll modding for Farming Simulator starts and ends with GIANTS Editor. If you want to make a quick change to a map or a vehicle, you can open its file and edit attributes in GIANTS Editor. If you've created a full mod from scratch, you pull all the pieces together and prepare them for inclusion in the game in GIANTS Editor. Think of GIANTS Editor as your modding dashboard.

You don't need to do a lot in order start working with GIANTS Editor; it ships with Farming Simulator. So if you've been playing the game, you're good to go with the editor; you just need to install it. You can find the install file in the sdk folder wherever you've installed Farming Simulator on your hard drive. (On a Windows computer, it's usually something like C:\Program Files (x86)\ Farming Simulator 2015.) Of course, going to the

GIANTS Developer Network website (`http://gdn.giants-software.com`) and checking for updates is still a good idea. That way you can be sure you get the latest features and bug fixes. Updated versions of the editor are free to download after you've registered on the site (which is also free).

This chapter serves as your jumping-off point into the world of creating mods for Farming Simulator by making sure you have firm footing when it comes to using GIANTS Editor. Regardless of how simple or complex your mod may be, it needs to come through GIANTS Editor, so this chapter is relevant, no matter your general modding experience.

Knowing the Editor's Parts

When you first launch GIANTS Editor, you'll see a Getting Started splash window that provides you with a hotkey reference and a set of buttons that links you to a number of useful resources to help quickly get you on the road to modding. You can toggle whether this window appears every time you launch it by clicking the Show at startup checkbox in the window's lower-left corner. These resources are certainly valuable, but you also have this book, so you can comfortably close this window for the time being. You can always bring it back from the Help menu in the editor (Help⇨Getting Started . . .).

After you move past the splash window and actually get into the editor, you may think it looks rather stark, consisting of a set of mostly empty panels. Not to worry, though, those panels will fill up pretty quickly. Figure 1-1 shows GIANTS Editor with the default interface and a scene already loaded.
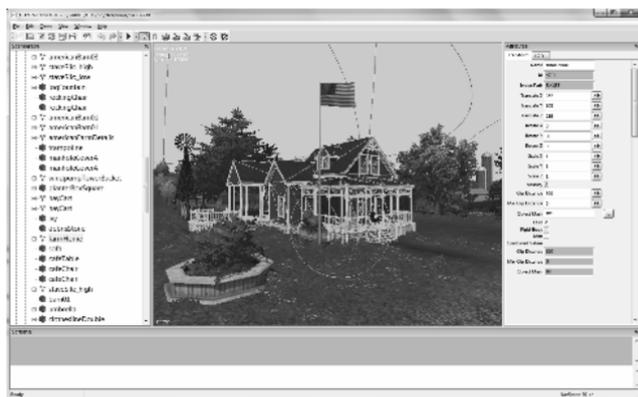
Figure 1-1: The GIANTS Editor default interface.

REMEMBER

You can see four main panels when you first load GIANTS Editor:

- **Scenegraph:** You can find the Scenegraph on the far left of the editor window. The Scenegraph gives you a hierarchical view of the 3D scene, including all models, lights, and cameras. Think of it as an outline for your mod. In complex scenes, the Scenegraph panel is incredibly useful for selecting the object you're interested in editing.

- **3D Viewport:** The 3D Viewport is the large panel at the center of the editor window and is where the majority of your work takes place. Here you can select and manipulate objects in your mod; the 3D Viewport also provides a decent preview of what you can expect your mod to look like after you load it into Farming Simulator.

- **Attributes:** The Attributes panel on the far right of the editor window can show different settings and parameters, depending on the object you currently have selected. At the very least, any object you select will have Transform attributes for controlling how that object is positioned and oriented in 3D

space. From there, depending on what the object is and what it does, it may have a wide variety of potential other subtabs available in the attributes panel. For example, in Figure 1-1, the selected building in that scene has a separate tab labeled LOD, for *level of detail*.

✔ **Scripting:** The Scripting panel is across the bottom of the editor window. This panel gives you a log and basic feedback on what's been done in your scene, such as loading external textures. It can also give you warnings if you have missing assets or if you've formatted something incorrectly in your mod. When things go pear-shaped in your mod, the Scripting panel is your best friend for troubleshooting what happened. And, of course, you can use the Scripting panel to type commands and make large automated changes to objects in your scene. Chapter 12 discusses scripting in greater depth.

With the exception of the 3D Viewport, you can move around any panel in the GIANTS Editor interface by clicking and dragging the panel's header bar. Doing so allows you to place the panel in another location or leave it as its own floating window. Being able to customize your interface is especially useful if you're working on a computer with multiple monitors. You can keep the 3D Viewport as big as possible on one monitor and move the other panels to your other monitor. Also, you can close any panel by clicking the little X on the right of the panel's header. You can bring back any closed panels from the Window menu.

Loading Assets

The file format that GIANTS Engine uses is the I3D format. I3D is an eXtensible Mark-up Language (XML) file format. That means, in part, that you can open it with a plain text editor and make changes to it. Chapters 6 and 11 discuss I3D and XML more.

For the purposes of this chapter, you just need to know that an I3D file encapsulates or references all the necessary data for a 3D asset in GIANTS Engine. That also means I3D files are what you load and modify from GIANTS Editor for your Farming Simulator mod. This section explains how to open full maps as well as individual assets that may appear on a map.

Opening an existing map

The easiest asset to open in GIANTS Editor is the default map that comes with Farming Simulator. Go to File➪Open in GIANTS Editor and navigate to the maps folder within the folder where you've installed Farming Simulator (typically `C:\Program Files (x86)\Farming Simulator 2015\data\maps`) and choose the file named `map01.i3d`. You should see the familiar original map in the 3D Viewport after it finishes loading. Figure 1-2 shows the default Farming Simulator map loaded in GIANTS Editor.
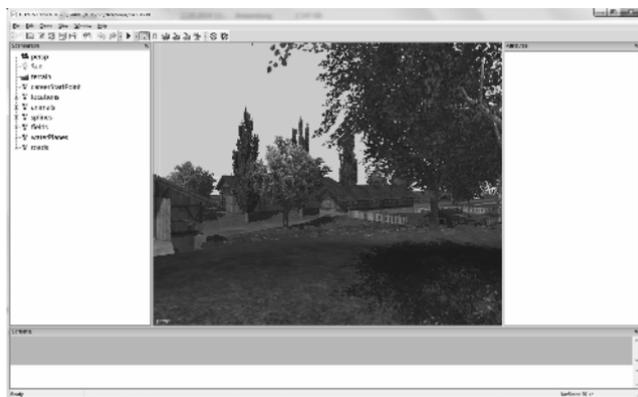

Figure 1-2: The default Farming Simulator map (`map01.i3d`) opened within GIANTS Editor.

Do *not* save or overwrite the default Farming Simulator map, especially if you've made any changes to the file. At the very least, doing so may change the default behavior of

the game. At worst, it may cause the game not to load and force you to reinstall it. Although Chapter 2 covers exporting the original map for modifications, right now your main focus should be on loading the map in GIANTS Editor and poking around to familiarize yourself with the interface.

Using this same basic method you can open any map scene. If you have any map mods installed, you can try opening up the map scenes from them as well.

Previewing objects

A Farming Simulator map is really a compilation of different 3D assets, including props, terrain, buildings, and so on. Suppose you're not interested in working with a full map, and you only want to have a look at one of the objects that appears on the map. You don't have to open the map in GIANTS Editor and hide everything except what you want to see.

You just need to follow the same basic steps for opening a map in GIANTS Editor. Find the I3D file for the object and open it from the editor. Figure 1-3 shows a mailbox from the default Farming Simulator map loaded in GIANTS Editor.
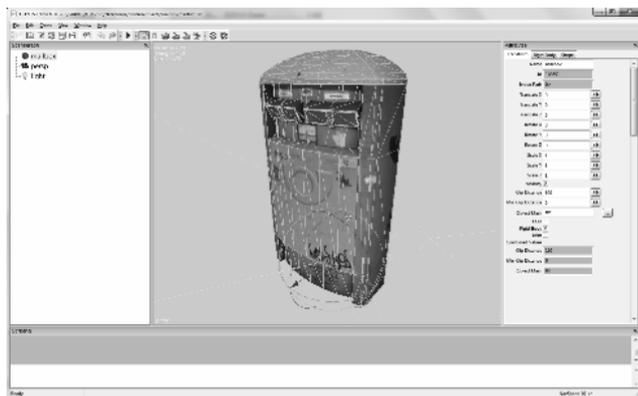

Figure 1-3: A mailbox object opened in GIANTS Editor.

When you first load an object in the editor, you may notice that the object may be really small in the 3D Viewport or out of view entirely. Fortunately, you can easily fix it with the following steps:

1. **If you can see the object in the 3D Viewport, you can select it by clicking on it.**

   If it's too small to select that way or if it's not visible in the 3D Viewport at all, you can click on the object's name in the Scenegraph panel and select it that way.

2. **With the object selected, you can frame the 3D Viewport on it using the F hotkey.**

   Doing so brings the object into view. However more than likely, the view will be too close to see the entire object. Using the scroll wheel on your mouse, you can back away from the object in the 3D Viewport and make it more visible. For more ways to navigate the 3D Viewport, refer to the next section.

You may also notice that your object appears really dark. Most objects don't emit light, so most object I3D files don't include any light in the scene, which can make previewing an object difficult.

TIP

To see the object clearly, you may want to add a light using the Ctrl+L hotkey combination. You can also add a light from the Create menu (Create⇨Light).

REMEMBER

If you're viewing objects from the Farming Simulator data folder, *do not save* those object files, especially if you've made modifications like adding a light. Doing so affects how the object appears in the game.

Navigating in 3D Space

Being able to move around in the 3D Viewport to see the map or object from different angles is also important. You can move around by using the mouse and the Alt key on your keyboard.

TIP

Having a three-button mouse when working with 3D software is really in your best interest. These programs have a tendency to use as many buttons on your computer as they can get. Fortunately, most modern desktop computers come with three-button mice. (***Note:*** You can find the third button on most of these mice by pressing down on the mouse's scroll wheel.) If you have a laptop, though, the built-in trackpad doesn't often have a middle mouse button. In that case, I highly recommend that you purchase a proper mouse.

REMEMBER

Navigating a 3D scene consists of three main types of movement:

- ✔ **Orbiting:** The view from the 3D Viewport rotates around a fixed location. In GIANTS Editor, you orbit the view by holding Alt while clicking and dragging your left mouse button.

- ✔ **Panning:** The view from the 3D Viewport always faces the same direction, but it moves horizontally and vertically. Imagine that you're stepping side-to-side or squatting and standing while always looking the same direction. You pan in GIANTS Editor by holding Alt while clicking and dragging your middle mouse button.

- ✔ **Zooming:** The view from the 3D Viewport gets closer or farther away from a point in 3D space. A quick way to do this is with your mouse's scroll wheel. However, scrolling to zoom snaps in fixed increments. If you want more fine-grained control, hold Alt while clicking and dragging your right mouse button. Zooming this way is much smoother.

Using Framed Rotate

You can use another option for navigating in the 3D Viewport: Framed Rotate specifically relates to orbiting in the 3D Viewport. You can use the F hotkey to frame the 3D Viewport on the selected object. When you orbit the view with Framed Rotate enabled (View⇨Framed Rotate), you orbit around the last framed location, no matter how far away you pan from it.

REMEMBER

Framed Rotate is great when you want to focus your attention on a single specific object. However, if you want to navigate a large scene like a map, having Framed Rotate enabled can make things difficult and unpredictable. When Framed Rotate is disabled, you can move about the 3D Viewport more freely. In fact, it feels a lot more like you're rotating the view camera while holding it rather than orbiting around a fixed point somewhere else in 3D space.

Choosing camera views

All I3D files have at least one camera object in them. The default camera is named *persp,* for *perspective.* However, some I3D files may have multiple cameras in the scene. These cameras are typically part of vehicle objects so the player has more than one option while driving. Of course, if you're interested in making a vehicle mod (or tweaking the camera angles in an existing vehicle), you need to see from the perspective of those cameras within GIANTS Editor.

TIP

You can change the current active camera from the View menu (View⇨Camera). This submenu has a list of every available camera in the I3D file. Clicking a camera's name in the menu automatically changes the 3D Viewport to see from that camera's perspective. Figure 1-4 shows the expanded View menu with the Camera submenu on a vehicle with two cameras.
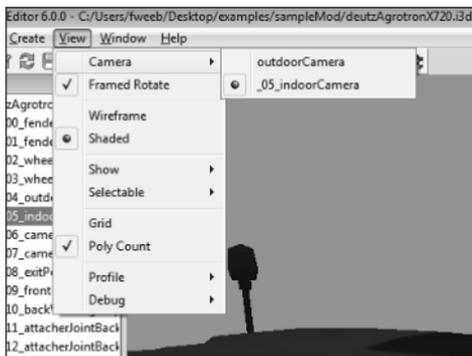

Figure 1-4: You can choose from two camera objects in this vehicle file.

WARNING!

Be careful about navigating in the 3D Viewport after changing to one of these vehicle cameras. By doing so, you're actually changing the position and orientation of the camera itself. For that reason, when opening a vehicle I3D file in GIANTS Editor, it's a good idea to add an additional camera to the scene to be your work camera. That way you don't mess up any of the vehicle's cameras. Of course, if you opened this file from Farming Simulator's data folder, you shouldn't be saving over it anyway. But creating a work camera is still a good practice to get into, just in case.

Transforming Objects

The real fun begins with modifying and changing things. Adjusting the location, rotation, or scale of an object in 3D space is called *transforming* the object. In GIANTS Editor, the easiest way to transform any active object is with the transform gizmo in the 3D Viewport. As shown in Figure 1-5, the transform gizmo looks like a 3D-axis surrounded by circles.
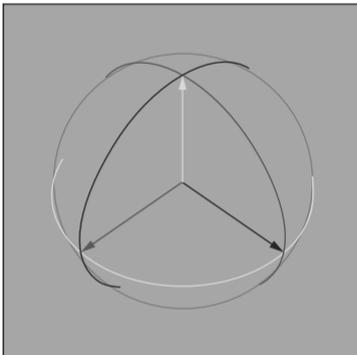

Figure 1-5: The transform gizmo allows you to move and rotate the active object.

The following sections examine the different ways that you can transform objects in GIANTS Editor.

Translating, rotating, and scaling

The transform gizmo gives you control over two types of transformations:

- ✔ **Translation:** Otherwise known as moving your object or changing its location. Use the gizmo to translate your active object by left-clicking and dragging one of the arrows on the gizmo's 3D axis.

- ✔ **Rotation:** To rotate your active object with the gizmo, left-click and drag along one of its three circles.

Another way that you can transform an active object is to scale or adjust its size. Unfortunately, the transform gizmo doesn't provide the facilities for adjusting scale. Instead, you need to make scaling adjustments from the Transform tab of the Attributes panel, as shown in Figure 1-6.

The translate, rotate, and scale fields take up the bulk of the space in the Transform tab of the Attributes panel. These text fields give you much more precise control over the location, orientation, and size of your active object. The following list gives additional information about each of these fields:

- ✔ **Translate X/Y/Z:** These values are measured in meters from the scene's origin (0m, 0m, 0m). Knowing the units here is especially important when putting an object on a map in a game. It can be pretty disorienting if you expect a part of a building to be 1cm off the ground, but it ends up floating 1m above the ground.

- ✔ **Rotate X/Y/Z:** These values are measured in degrees relative to the object's original rotation, which should be (0°, 0°, 0°).
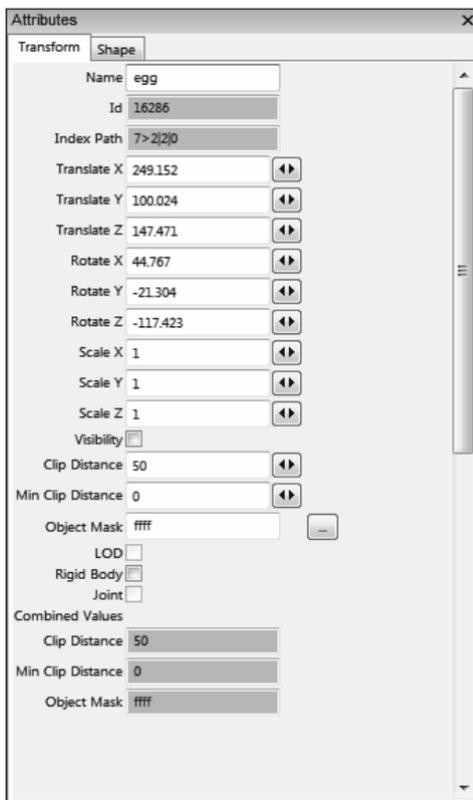
Figure 1-6: The Transform tab of the Attributes panel
is available for any object in an I3D file.

✔ **Scale X/Y/Z:** These values are multiplied by the
object's original scale, which should be (1, 1, 1). So
if you set the scale values to (0.5, 0.5, 0.5), then it
will be half of its original size. There isn't any way
to lock the three scale values together, so if you
want your object to be scaled uniformly, you need to
double-check these values and make sure they're all
the same.

REMEMBER

In GIANTS Engine, the 3D environment is in a *y-up world*. That is, if you look at the 3D axis, the *y*-axis points up and down in the world, between the ground and the sky. Think of the plane defined by the *x*- and *z*-axis as the ground at sea level. The *x*-axis points east/west while the *z*-axis points north/south.

Selecting objects

You can also select multiple objects at once. The method that you use varies slightly depending on whether you're in the 3D Viewport or the Scenegraph.

- ✓ **3D Viewport:** You can add to the current selection set by Shift+left-clicking multiple objects. There is no way to remove an object from the current selection set, so if you select something incorrectly and you want to stay in the 3D Viewport, you'll need to redo your selection.

- ✓ **Scenegraph:** The Scenegraph is much better suited for multiple selection. You can toggle whether an object is part of the current selection set by Ctrl+left-clicking its name. Furthermore, if you click one object's name and Shift+left-click another name elsewhere on the tree, all of the objects between those two are also selected.

REMEMBER

Regardless of how you make your multiple selection, the first object you select has a green wireframe whereas all additional selected objects have white wireframes. The green object is the *active object,* and its properties are the only ones editable from the Attributes panel. Furthermore, transformations with the transform gizmo in the 3D Viewport also only affect the active object. If you want to manipulate multiple objects at the same time, you need to make a new Transform Group and add those objects to it. Check out Chapter 2 for more information.