

Torque Game Builder – World Limits Tutorial

Introduction

In this tutorial, you'll learn how to set up and use world limits in Torque Game Builder (TGB). 'World limits' are an object's boundaries within a game. That is, an object's world limits define the area the object can occupy in your world.

To prepare for this tutorial, run Torque Game Builder and load the *TGB* project (if it's not already loaded) by choosing *Open Project...* from the file menu and selecting *TGB*. Next, create a new level by selecting *New* from the file menu. Finally, save your level by choosing *Save As* from the file menu. Be sure to give your level the name "WorldLimit".

For this tutorial, we'll just use one object to examine all the possibilities of the Torque Game Builder world limit system. In the *Create* tab on the right side of the Level Builder, open the *Static Sprites* section. Drag the brown, metallic crate into the *Scene View* (figure 1). If you don't see that crate, find the object with the text "#/16" under it (# can be any number), then click that square until it says "1/16" under it. Once your object is dragged onto the screen (as shown in *Figure 1*)

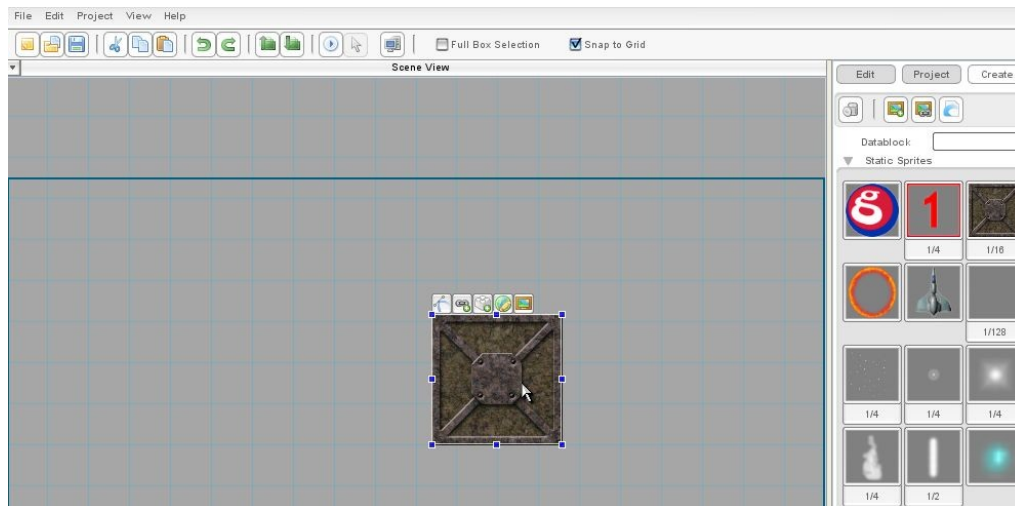


Figure 1

In order to see the effects of world limits, we're going to want this object to move. First, make sure that the crate is selected by clicking on it. Next, click the *Edit* tab on the right side of the screen and scroll down to the *Physics* section. Open that section by clicking it, then change *Velocity X* to "20" and *Velocity Y* to "10". Choose *Save* from the file menu to save, then press the *Play Level* button (as shown in *Figure 2*). If everything is done right, you should see the crate slide off the screen to the right.

Torque Game Builder – World Limits Tutorial

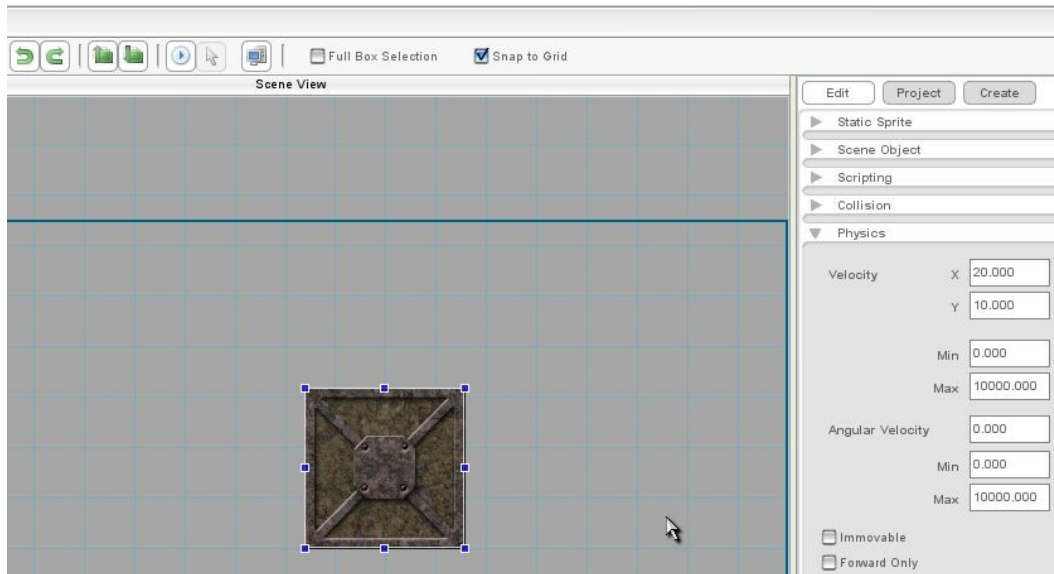


Figure 2

Setting Up World Limits

In order to see world limits at work, we need to define those limits for our crate. To do this, select the crate object in the *Scene View* and keep your mouse over it. You'll see the widgets appear over it... the fourth one is *Change the world limits for this object* (as shown in Figure 3). Click it, and the view will zoom out to show you the current world limits of the crate, which is shown as a gray rectangle.



Figure 3

Drag the sizing handles (blue squares) until the world limits are within the blue camera view box. When this is complete, click on the *Selection Tool* (white arrow) in the toolbar (as shown in Figure 4), or hit *Enter*. This saves the world limits and returns you to the normal view.

Torque Game Builder – World Limits Tutorial

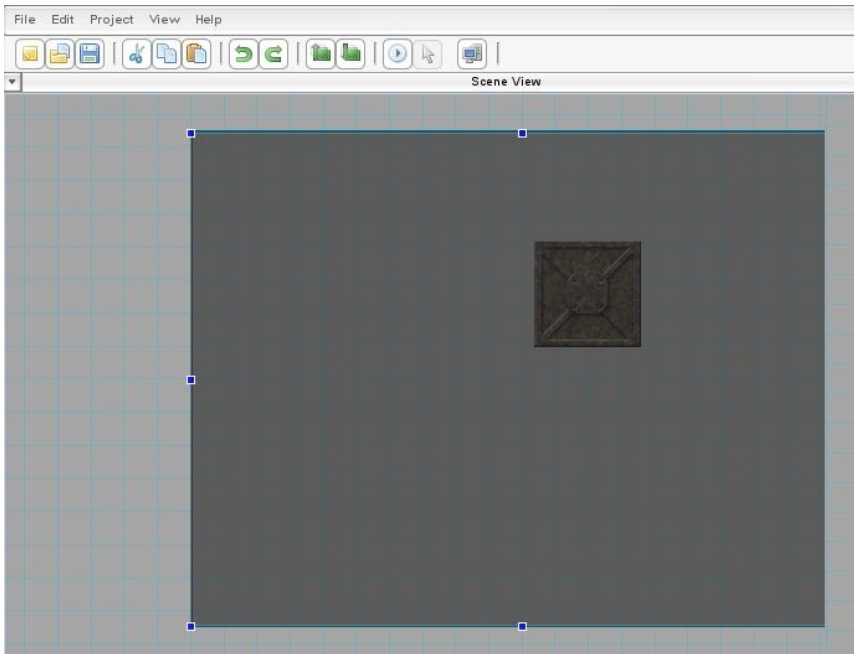


Figure 4

World Limit Response Modes

Now we are set up to experiment with the various response modes. Every object in your game has its own world limit response settings. Select the crate, then open the *World Limits* section in the *Edit* tab (as shown in Figure 5). Assuming you haven't fiddled with this already, you'll just see the *Limit Mode* property set to *OFF*. Set it to *NULL* (as shown in Figure 5), and you'll see the coordinates that define the crate's world limits, as well as the *Callback* checkbox. We won't go too deeply into the *Callback* checkbox here, but suffice it to say that it is used when you want to script your object's limit response in an *onWorldLimit* function.

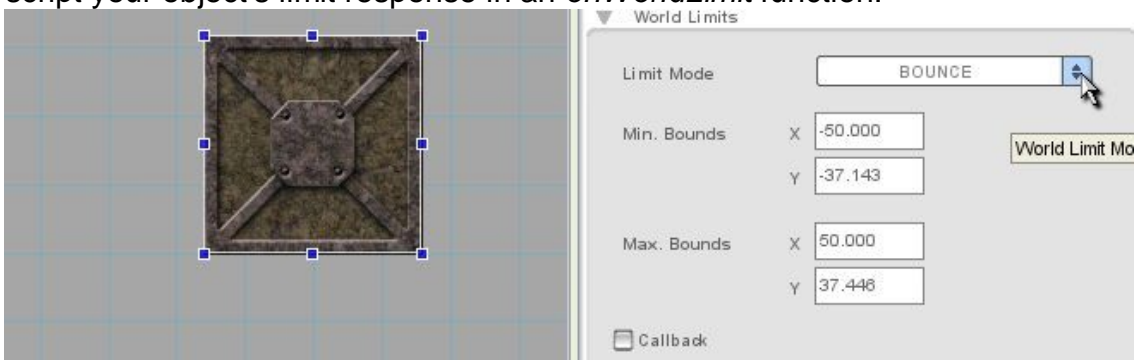


Figure 5

Okay, time for the fun part: trying each response mode. We'll go through the definitions here; you should go ahead and set the *Limit Mode* to each of these, then click *Play Level* to see the mode in action.

Torque Game Builder – World Limits Tutorial

OFF: The world limits are not even tested by the object.

NULL: The world limits are tested, but no action is taken when the object reaches the limits; it just continues on its way. This mode is used in combination with the *Callback* checkbox to script your own responses to reaching the world limits.

BOUNCE: The object bounces off the world limits in a simple, pong-like way and doesn't include spin.

CLAMP: The object slides along the world limits and will not move past them.

STICKY: The object stops all movement when it touches the world limits.

KILL: The object deletes itself when it touches the world limits.

If you ever want to see the world limits in the *Scene View*, click on an empty area of the *Scene View* and open the *Debug Rendering* section in the *Edit* tab. In this section, select the *World Limits* checkbox, and you'll see the crate's world limits displayed in white (as shown in Figure 6). Note that you will not see anything for objects that have *Limit Mode* set to *OFF*.

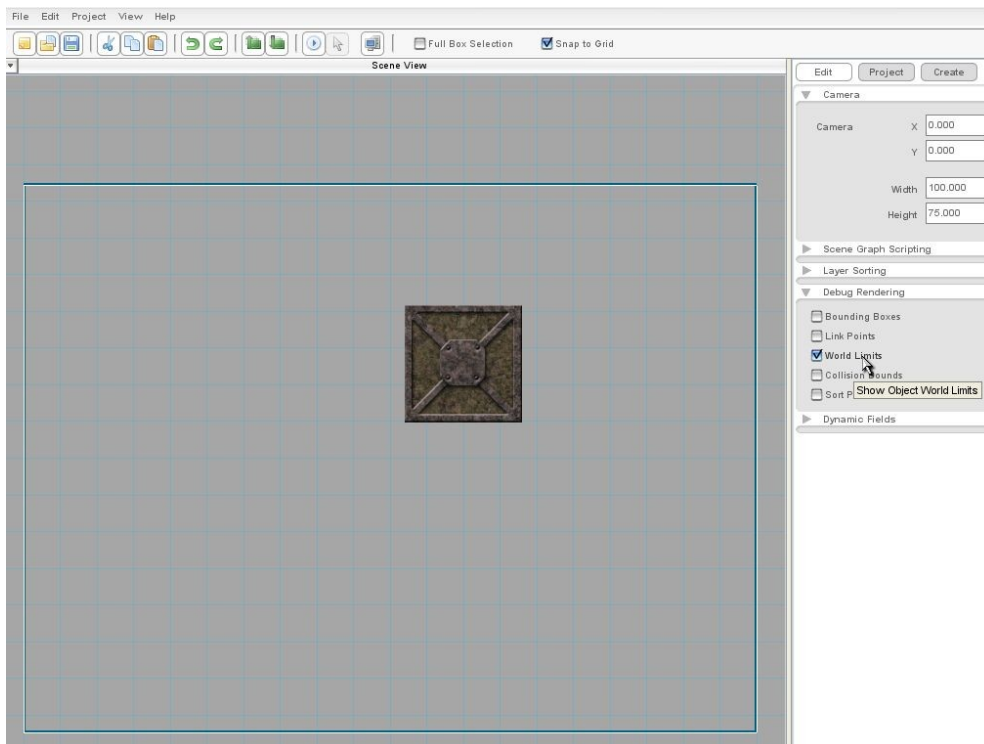


Figure 6

Torque Game Builder – World Limits Tutorial

In Conclusion

This tutorial has covered most of the basics of world limits in TGB. These represent very simple possibilities for world limits, and you will often want to script additional effects. One of the most useful of the basic responses is *KILL*, which can easily take care of any objects (like shots or the like) that go flying off the screen. Whatever your specific needs, you now have a solid jumping off point – Go Get 'Em!