Barrels

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1. Introduction

"Barrels" is a collection of procedural PBR barrel designs for video games developers. The procedural aspect means there are virtually unlimited looks you can give to the barrels, creating unique looks that no one else has. Physically Based Rendering means the looks can appear hyper realistic.

Due to all of this, there is a little setup involved. It shouldn't take long and maybe it'll be quite fun, as you'll get to fine-tune the look of your models.

In most cases the Quick Set Up section will be all that you need. If you're interested in knowing more about each of the values you're able to tweak, check out the Procedural Values section.

For advanced users, if you're interested in scripting run time changes in the texture of the model, refer to the Scripting section.

Finally we include a brief list of the Animations currently included.

We plan on updating our assets periodically, so please check the Asset Store for available updates.

2. Quick Set Up

This quick guide will work for most users, and does not allow for run time changes in the look of the textures. *For videos, please visit our website at www.InfinityPBR.com where you will find much more detailed examples.* ***We highly suggest you create your maps in a new, empty project.***

1. Bring the model prefab into the Scene view. Use the full resolution model for now.
2. Find the latest procedural material: `Assets/SFB_Dungeon/SFB_Barrel/Procedural Material/SFB_Barrel_v##`
3. Drag that material onto each mesh of the prefabs if it's not already assigned. It may take a bit of time during any of these steps for Unity to pre-build the material. After dragging, the model may appear black or another solid color until the process is complete. Please be patient. (We hear this speed is based mostly on your GPU)
4. Rotate the camera in the Game and/or Scene view to something that you like, and select the Procedural Material in the Project view to load it in the Inspector.
5. Adjust the various aspects of the material to obtain the look you like. Each time you change something Unity may take a moment to rebuild the material. This is not a run-time optimized material, and with so many options, it may take a few moments to complete.

Texture Exporter —> *Window/Save Texture [Shift-Command-T]*
Select the top-level material (with the rectangle icon, not the circle), and run this script. It will export the finished texture maps for you (select the temporary "EXPORT_HERE" folder when prompted), and insert them into a new Standard Shader material for you! Materials end up in time-stamped folders, so you can quickly make many versions of the barrels for your games.

* Due to a Unity bug, you may need to manually assign the "MetallicRoughness" map into the "Metallic" field of the new Standard Shader Material.

* Due to a Untiy bug, all procedural materials can't be exported in Unity 5.2 through 5.2.2. This is fixed in 5.2.3 — choose the correct export script for your version.

NOTE: If you'd like to use custom wood/metal materials, first use the SFB_BarrelBase_v## material. Set it up as you'd like, and use the Texture Exporter to export the maps.

Next, bring the main SFB_Barrel_v## material to your object, and drag your exported custom maps into the input fields of that material. Make sure you check the "Use Custom Input" box, and then you'll be able to add all the effects you'd like.

3. Procedural Values

Here you'll find greater details on what each value does and how it may be used. There could be a great many ways to use the value options, often with each other, that we don't know about or don't talk about here. Take a moment and play around with it and see what you can do! The ID is used for scripting run time changes.

SFB_Dungeon_Barrels_1 | SFB_Dungeon_Barrels_2

Category	Name	ID | Type Min,Max	Description
Main	Wood Material	WoodMaterialNumber int (1,10)	Which material to use
	Metal Material	MetalMaterialNumber int (1,10)	Which material to use
	Rotate Wood?	WoodRotate Boolean	Non-default woods require rotation. Click this.
	Metal Roughness	DefaultMetalRoughness float (0.0,1.0)	Roughness of the default metal.
	Wood Roughness	DefaultWoodRoughness float (0.0,1.0)	Roughness of the default wood.
Wood Weathering	Dust	WoodWeatheringDust float (0.0,1.0)	Dust, starts on top, very top-heavy
	Dirtiness	WoodWeatheringDirtiness float (0.0,1.0)	Dirtiness, starting from seams
	Edge Wearing	WoodWeatheringEdgeWearing float (0.0,1.0)	Edge Wearing
	Varnish Peeling	WoodWeatheringVarnishPeeling float (0.0,1.0)	Peels varnish starting from middle areas
	Age	WoodWeatheringAge float (0.0,1.0)	General Aging of the wood
	Desaturation	WoodWeatheringDesaturation float (0.0,1.0)	Desaturation of the parts missing varnish
	Brightness	WoodWeatheringBrightness float (0.0,1.0)	Brightness of the parts missing varnish
Metal Wear	Dust	MetalWearDust float (0.0,1.0)	Dust, starting on the top
	Dirtiness	MetalWearDirtiness float (0.0,1.0)	Dirtiness of the metal
	Edge Wearing	MetalWearEdgeWearing float (0.0,1.0)	Edge Wearing
	Rust	MetalWearRust float (0.0,1.0)	Adds rust to the metal
	Height	GroundDirtHeight float (0.0,1.0)	Height (bottom up) of the dirt

Category	Name	ID | Type Min,Max	Description
Ground Dirt	Level	GroundDirtLevel float (0.0,1.0)	Overall thickness
	Contrast	GroundDirtContrast float (0.0,1.0)	Contrast of the pattern
	Color	GroundDirtColor Color	Color of the dirt
	Roughness	GroundDirtRoughness float (0.0,1.0)	Reflectiveness of the dirt.
Ceiling Dirt	Height	CeilingDirtHeight float (0.0,1.0)	Height (top down) of the dirt
	Level	CeilingDirtLevel float (0.0,1.0)	Overall thickness
	Contrast	CeilingDirtContrast float (0.0,1.0)	Contrast of the pattern
	Color	CeilingDirtColor Color	Color of the dirt
	Roughness	CeilingDirtRoughness float (0.0,1.0)	Reflectiveness of the dirt.
Dirt	Level	DirtLevel float (0.0,1.0)	Thickness of the dirt - starts in seams.
	Contrast	DirtContrast float (0.0,1.0)	Contrast
	Grunge Amount	DirtGrungeAmount float (0.0,1.0)	Grunge on the surface
	Color	DirtColor Color	Color of the dirt
	Roughness	DirtRoughness float (0.0,1.0)	Reflectiveness of the dirt.

4. Scripting

It's possible to change values during run time. We include a few versions of the material, some of which are optimized for common run-time options. In those cases, you'll likely want to bake maps for the base materials you plan on using (which do not change at run time), and use the optimized versions. This will speed up the changes in game.

Please Note: We are not the best coders. There may be more ways of doing what we're doing, perhaps better ways. Please use the forums on our site and the Unity forums if you'd like to discuss or ask the community about various ways of doing this. ***We are also using Unity Script because, simply, it's what we currently understand.*** *Check out our demo scripts for more extensive examples.*

```
var substance                  : ProceduralMaterial;

// Set an Int or a Float value
substance.SetProceduralFloat("Grunge2Volume", 0.5);

// Set a Color value
substance.SetProceduralColor("Grunge2Color", Color(1,1,1,1));

// Get a Vector2 value
var currentOffset   : Vector2 = substance.GetProceduralVector("Grunge2Offset");

// Set a Vector2 value
substance.SetProceduralVector("Grunge2Offset", Vector2(currentOffset[0],currentOffset[1]));
```

5. Animations

No animations for the Barrels. :(

6. Level Of Details

There are multiple level of details available. The full resolution is already very mobile friendly, and the other LODs are a bit distorted so should only be used far away. However, the lowest LOD is only 98 Tris, which is pretty low.

#	Name	Full	LOD1	LOD2	LOD3
1	Barrel	464	278	166	98

7. Change Log

v8.0

- Separated the materials into two objects.
- Fixed some issues with the Metal Wear on the default material
- Added the Export Texture helper script

v7.0 - Initial Version.