

Realistic Engine Sounds - Plus

By: Yugel Mobile – Skril Studio



Thank you for purchasing Realistic Engine Sounds Plus!

Compatible with Unity Free and Pro version too

+ Mobile Support!

Contents

Package Includes.....	3
Importing R.E.S. asset package into your project.....	5
How to update from older RES version?.....	5
How is this package working?.....	6
Setup for Unity Car.....	11
Setup for Edy's Vehicle Physics.....	12
Camera controller for Edy's Vehicle Physics.....	13
Setup for Realistic Car Controller.....	14
Camera controller for Realistic Car Controller.....	15
Setup for Randomation Vehicle Physics.....	16
Setup for NWH1 and NWH2 Vehicle Physics.....	17
Setup for Motorbike Starter Kit.....	18
Setup for Vehicle Physics Pro.....	19
Setup for Unity Car Pro.....	19
Setup for Driver (Traffic System).....	19
Setup for iRDS (Intelligent Race Driver System).....	19
Setup for MS Vehicle System - Free.....	20
Setup for Realistic Car Kit.....	20
Setup for Universal Vehicle Controller.....	20
Setup for FGear Vehicle Physics.....	21
Set Up Your Own Engine Sound.....	22
Muffler Crackle Sound.....	24
Shifting Sounds.....	25
Supercharger Sounds.....	25
Turbocharger Sounds.....	26
Tips, Tricks and Optimisations.....	27
License.....	28
Credits.....	28

Package includes:

- 15 .unitypackages for vehicle physic controllers (containing prefabs and demo scenes):
 - Edy's Vehicle Physics
 - Realistic Car Controller
 - Randonation Vehicle Physics
 - Unity Standard Assets Car
 - NWH Vehicle Physics
 - NWH2 Vehicle Physics
 - Motorbike Starter Kit
 - Vehicle Physics Pro
 - Unity Car Pro
 - Driver (Traffic System)
 - Intelligent Race Driver System (iRDS)
 - MS Vehicle System - Free
 - Realistic Car Kit
 - Universal Vehicle Controller
 - FGear Vehicle Physics
- 14 ready to use engine sound packages for exterior and interior camera views with engine startup sounds:
 - Truck Old
 - i4 German
 - i4 Japanese
 - i4 Serbian
 - Diesel 2.5 German
 - i6 German
 - i6 German FREE (available for free in the Asset Store)
 - Rotary x8 FREE (available for free in the Asset Store)
 - V8 American – Classic
 - V8 American – Modern
 - V8 Italian
 - V8 Italian F355
 - V10 German
 - V10 Italian

There are 56 prefabs for (almost) each car controller + 58 clean engine prefabs + 62 universal prefabs for Turbo, Supercharger, Gear changing sound and Muffler crackle noise packs.

- There are more than 360 prefabs (Stock, EVP, RCC, RVP, NWH, MSK, Unity Standard Assets Car prefabs and more)
- Two Wav audio files for reverse gear (all engine sound prefabs use the same reverse gear Wav audio file)
- 12 controller scripts for prefabs + scripts for demo scenes
- More than 15 demo scenes:
 - Scene for testing Realistic Engine Sounds in an user friendly UI environment

- Scene for testing Realistic Engine Sounds Mobile in a user friendly UI environment
 - Unity Standard Assets car with Realistic Engine Sounds
 - Unity Standard Assets car with Realistic Engine Sounds Mobile
 - Realistic Car Controller with Realistic Engine Sounds
 - Realistic Car Controller with Realistic Engine Sounds Mobile
 - Edy's Vehicle Physics with Realistic Engine Sounds
 - Edy's Vehicle Physics with Realistic Engine Sounds Mobile
 - VehicleManager_EVP5_RES
 - Randomation Vehicle Physics with Realistic Engine Sounds
 - Randomation Vehicle Physics with Realistic Engine Sounds Mobile
 - NWH_RES
 - NWH_RES_mob
 - Camera_Controller_Demo (NWH)
 - All_engine_sounds (MSK)
 - All_mobile_engine_sounds (MSK)
- And more...

Each scene has it's own engine sound prefabs.

There are total 311 Wav audio files in this package.

There are more than *400 prefabs in this package.

*all supported car controller's prefabs are counted in

Importing R.E.S. asset package into your project

Import Realistic Engine Sounds into your project and later import the right *.unitypackage for the car controller you're using in your project.

When you're importing my asset for a project that is using a currently unsupported vehicle controller, just import, you need to create your own script to set your vehicle controller's rpm to Realistic Engine Sound's script. Feel free to contact me about adding support for your unsupported car controller, but you must share a sample project with me, otherwise I can't help to setup RES with your unsupported vehicle controller.

How to update from older RES version?

Before you update Realistic Engine Sounds for new version, backup your current project!

If you upgrade from RES-Lite version, delete everything in *RealisticEngineSounds* folder except the *Prefabs* folder and import RES-Plus into your project.

If you upgrade from older RES-Plus, delete *RealisticEngineSounds* from your project, and import the updated RES version into your project.

After this step import the required *.assetpackage for your car controller.

That's all, now you have the updated version of Realistic Engine Sounds - Plus. Read the Release Notes to find out what's new in this version.

How is this package working?

Before you start using this package you need to understand how is this package working, especially if you want to use your own Wav audio files.

There are two RES controller scripts: - RealisticEngineSounds.cs and RealisticEngineSounds_mobile.cs

RealisticEngineSounds_mobile.cs don't have deceleration sounds, it will use less audio sources.

For mobile devices I recommend to use RealisticEngineSounds.cs for Player's car and RealisticEngineSounds_mobile.cs for Opponent's car. If you want your player's car to be louder, use an Audio Mixer with the RES script.

Realistic Engine Sound script uses 9 Wav audio files:

- Idle: for car's idle rpm
- Low_On: low rpm sound on – used for accelerating
- Low_Off: low rpm sound off – used for decelerating
- Med_On: medium rpm sound on, car is accelerating
- Med_Off: medium rpm sound off, car is decelerating
- High_On: high rpm sound on, car is accelerating
- High_Off: high rpm sound off, car is decelerating
- MaxRPM: car is on maximum rpm and rpm limiting is set to on (if „Use rpm limit” is turned off, audio source is not created for this sound)
- Reversing: whistling sound is played with engine sounds when car is in reverse gear (only if reverse gear is enabled in R.E.S. script)

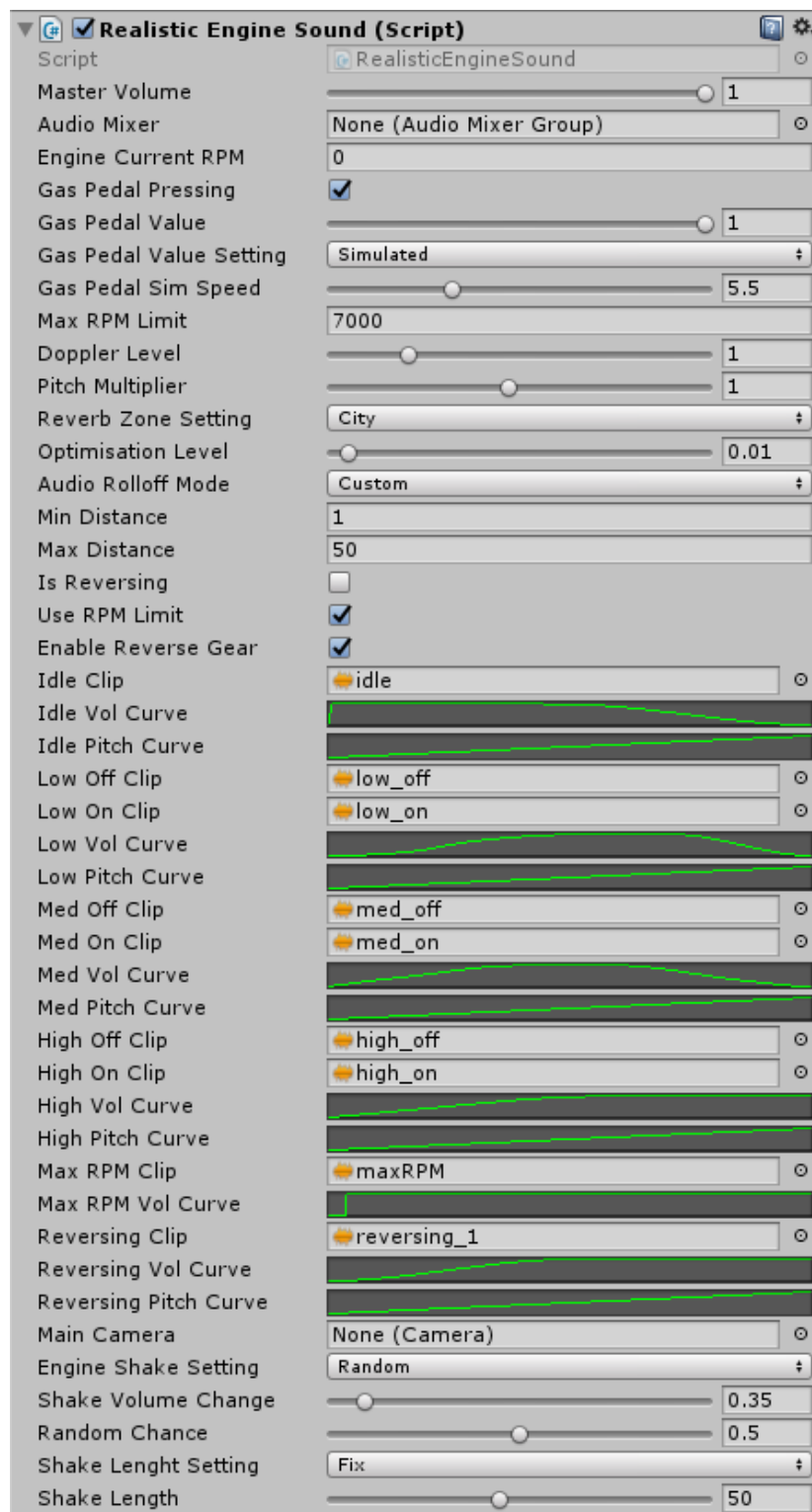
RES script can work with only one or two wav files too. You don't need to use all wav files listed above. For example can use only Idle and High wav files and set other audio clips to „None”. This will give a very simple sounding engine sound.

You do not need to add Audio sources to your Game Object, the script will do this for you.

Each audio has two settings:

- Volume Curve
- Pitch Curve

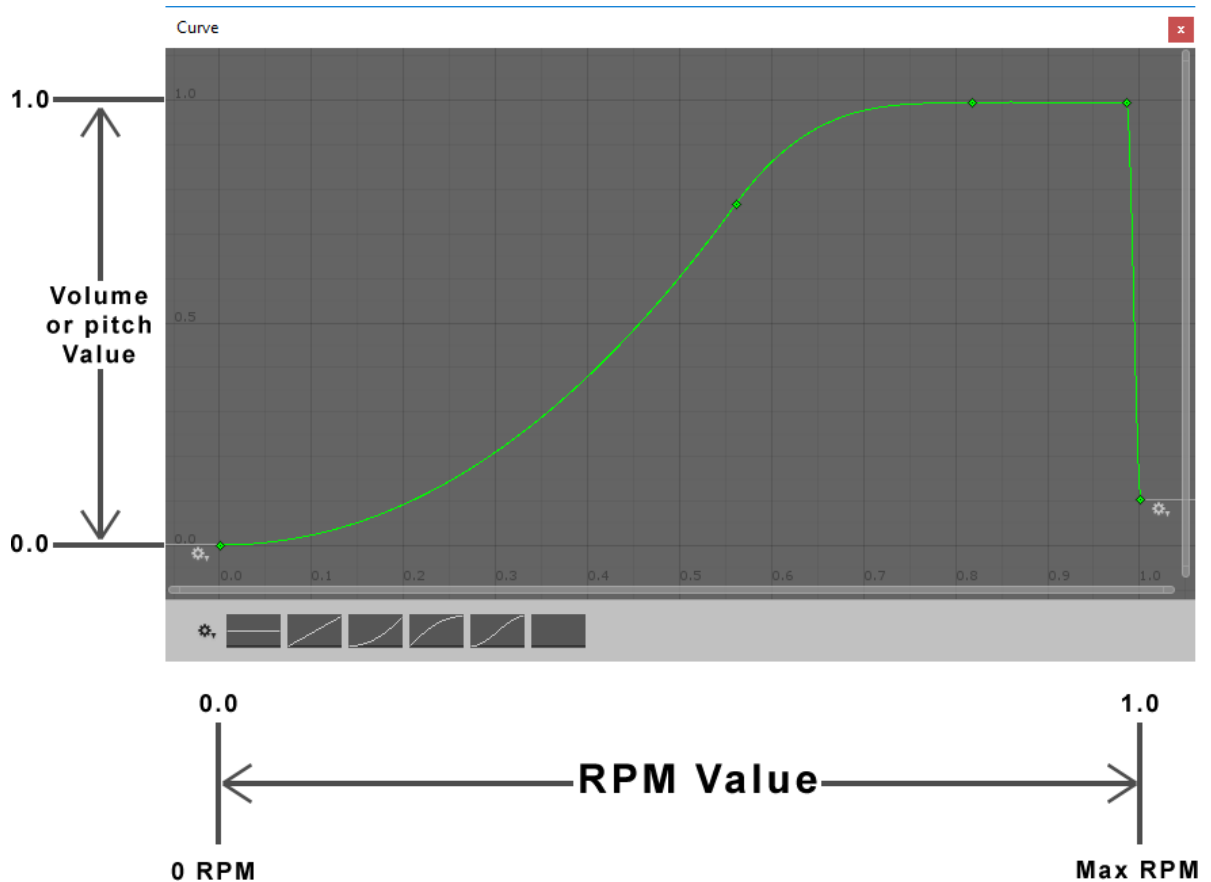
(on load and off load sounds use the same curve values made for their sound clip.)



- Master Volume: sets the prefabs maximum volume.
- Audio Mixer: add an audio mixer here to control all engine sounds volume at one place and add audio effects like Distortion. (can be leaved at None)
- Engine Current RPM: your car's current rpm (this needs to be set from a custom script, or use one of my controller scripts)
- Gas Pedal Pressing: if it's true it will play accelerating sounds, if it's false it will play decelerating sounds
- Gas Pedal Value: how much % is the gas pedal pressed (1 = 100%, 0,5 = 50%, 0 = 0%)

- Gas Pedal Value Setting (Simulated or Not Simulated): in *Simulated* setting sets the *Gas Pedal Value* and it will be simulated by *Gas Pedal Sim Speed* value when the car is started accelerating (this gives a smooth change between decelerating and accelerating sounds). In *Not Simulated* setting the *Gas Pedal Value* is need to be set by manually - this is good for joystick controlled games
- Gas Pedal Sim Speed: sets the simulation speed for *Gas Pedal Value* when *Gas Pedal Value Setting* is set to *Simulated*.
- Max RPM Limit: your car's max RPM (for RCC this is set automatically from RCC settings)
- Doppler Level: Determines how much doppler effect will be applied to this audio source (if is set to 0, then no effect is applied).
- Pitch Multiplier: sets the prefab's maximum pitch. With this setting you can make unique a sound with just one click!
- Reverb Zone Setting: adds a reverb zone to the game object and set it's preset.
- Optimisation Value: Audio Source with volume value below this value will be destroyed (at bigger value may be played less audio sources at a time, but engine sound may not change smoothly).
- Audio Rolloff Mode: How fast the sound fades. There are three Rolloff modes: Logarithmic, Linear and Custom Rolloff. Default is set to Custom.
- Min Distance: Within the Min distance the engine sound will cease to grow louder in volume.
- Max Distance: Max Distance is the distance a sound stops attenuating at. RES script will only create audio sources if the script is closer to Main Camera than Max Disrance. To save some performance in scenes with multiple cars, set Max Distance to a lower value.
- Is Reversing: if it's true, it will play reversing sound with engine sounds too when *Enable Reverse Gear* is enabled.
- Use RPM Limit: if it's true it will play max rpm clip if *Engine Current RPM* value = *Max RPM Limit* value.
- Enable Reverse Gear: enable reversing sound effect.
- Main Camera: this is set by automatically, but if it gives you NULL errors, you need to add your Main Camera here. Main Camera is needed for Max Distance value. If the script is farer from the Main Camera than Max Distance, it will destroy all of its audio sources, because of the distance this audio sources already can't be heard.
- Engine Shake Setting: this gives a „shake” effect when the player hits Gas. Settings: Off, Random, Allways On.
- Shake Volume Change: how much volume have the shaking effect.
- Random Chance: if Engine Shake is set to Random, this value can be set to how much chance will have the shake effect to appear.
- Shake Lenght Setting: how long is the shake effect. Settings: Random, Fix.
- Shake Lenght: if Shake Lenght Setting is set to Fix, Shake Lenght value can be edited. Bigger value gives longer shake effect.

Volume Curve and Pitch Curve settings are modified in a Curve Editor window. (see the image bellow)



From Left to right you see the car engine's rpm value.

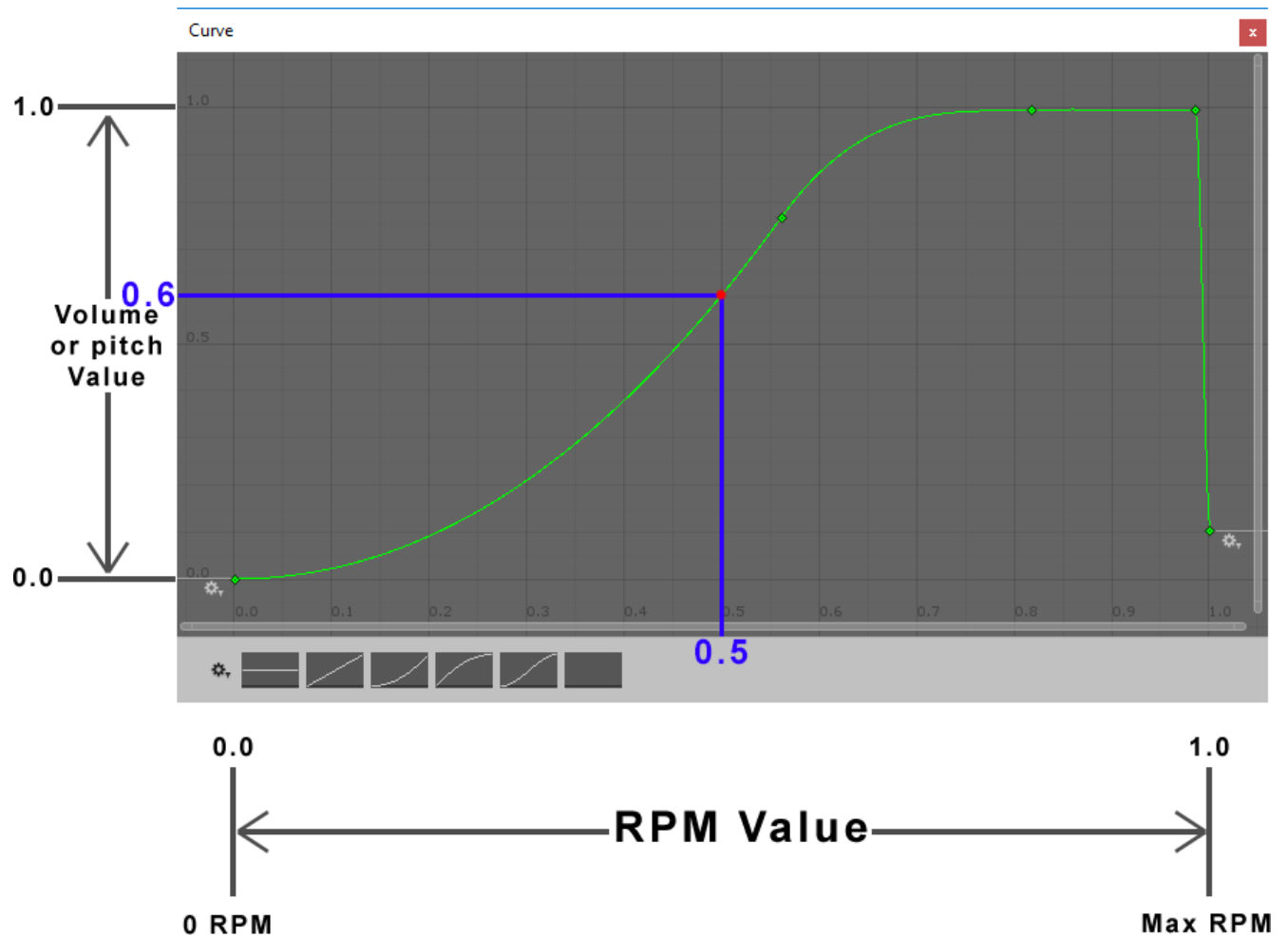
From up to down you see the volume's or pitch's value (depending on which one's setting you opened).

In this image you see the High rpm's volume setting for i4_german prefab.

These settings are set between 0 and 1 values by RPM Value.

0 value is = 0 rpm, 1 value is = Max RPM Limit, RPM value is calculated by Engine Current rpm.

For example: If your car's Engine Current rpm is 3500 and Max rpm Limit is 7000, your RPM value will be 0.5 (See the image bellow).



In this image you see High_On audio file's volume settings.

If rpm value = 0.5 volume value will be ~ 0.6

Setup for Unity Car

Youtube video url for this tutorial: <https://www.youtube.com/watch?v=0eDsfsUU54>

Import Unity Standard Assets and Realistic Engine Sounds.

Now import **UnityCar_RES-Plus.unpackage** from the following folder:

../RealisticEngineSound\Assets For Vehicle Controllers\Unity Standard Car\..

This unpackage gives you prefabs and demo scenes for Standard Assets car.

Open Unity Standard Assets_Car Sample Scene from the following folder:

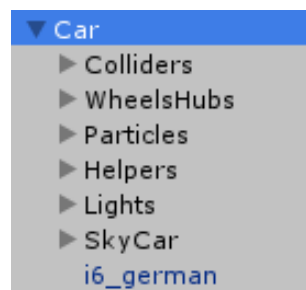
../SampleScenes/Scenes/..

Drag and drop one of my prefab for Unity Car on your car's game object. You can find prefabs for Unity Standard Assets car in the following folder:

../RealisticEngineSound/Assets/Prefabs/ Unity_Car_prefabs

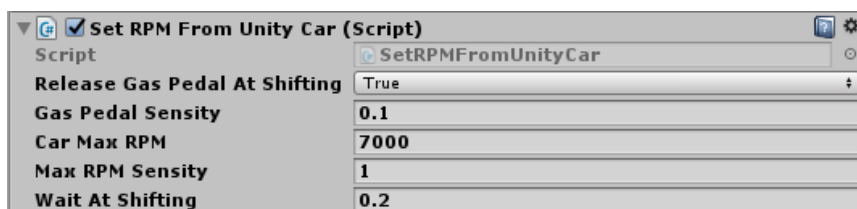
In this example I used i6_german prefab on my car game object.

Standard Assets car gameobject should look like this after you dropped one of my prefab on it :



That's all, now your Unity Standard Assets car have a cool engine sound, it's time to test it! Press Play button! 😊

Unity Car to RES controller script settings:



- **Release Gas Pedal At Shifting(True or False):** if set to true it will release gas pedal at shifting, and it will play off sounds for more realstinc engine sounds for a short time (Wait At Shifting value).
- **Gas pedal Sensity:** sensity of detecting gas pedal pressing
- **Car Max RPM:** car's maximum RPM
- **Max RPM Sensity:** sensity of playing rpm limit sound. (if CarMaxRPM is set to 7000, and Max RPM Sensity is set to 1, RPM limiting sound will start playing at 6999 RPM. If Max RPM Sensity is set to 100, RPM limiting will start playing at 6900 RPM.)
- **Wait At Shifting:** if Release Gas Pedal At Shifting is set to true, it will play off engine sounds for X seconds. In this example off engine sounds will be played for 0.2 seconds.

Setup for Edy's Vehicle Physics

Youtube video url for this tutorial: https://www.youtube.com/watch?v=6UZ5_HDflm8

Import Edy's Vehicle Physics and Realistic Engine Sounds.

Now import **EdysVP_RES-Plus.unitypackage** from the following folder:

..\RealisticEngineSound\Assets For Vehicle Controllers\EVP5\..

This unitypackage gives you prefabs and demo scenes for Edy's Vehicle Physics.

Open any Edy's Vehicle Physics Sample Scene.

Drag and drop one of my prefab for Edy's Vehicle Physics on your car's game object. You can find prefabs for E.V.P. car in the following folder:

../RealisticEngineSound/Assets/Prefabs/ EVP5_Prefabs

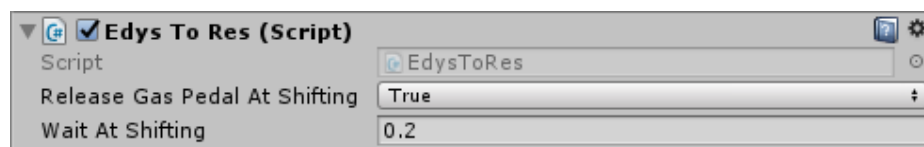
In this example I used i6_german prefab on my car game object.

EVP car gameobject should look like this after you dropped one of my prefab on it:



That's all, now your Edy's Vehicle Physics car have a cool engine sound, it's time to test it! Press Play button! 😊

Edy's to RES controller script settings:



- **Release Gas Pedal At Shifting (True or False):** if set to true it will release gas pedal at shifting, and it will play off sounds for a short time (Wait At Shifting value).
- **Wait At Shifting:** if Release Gas Pedal At Shifting is set to true, it will play off engine sounds for X seconds. In this example off engine sounds will be played for 0.2 seconds.

Camera controller for Edy's Vehicle Physics

Youtube video url for this tutorial: https://www.youtube.com/watch?v=D4ZUnQ_vdZc

You can control interior and exterior sounds by changing camera view with the stock EVP camera controls. All you need to do is just add a gameobject with my camera controller script to your car.

Add an engine pack with exterior and interior sounds to you EVP car. In this example I used the diesel prefab. Add a new gameobject to your car and name it to whatever you want. In this example I named it to "RES_CameraController".

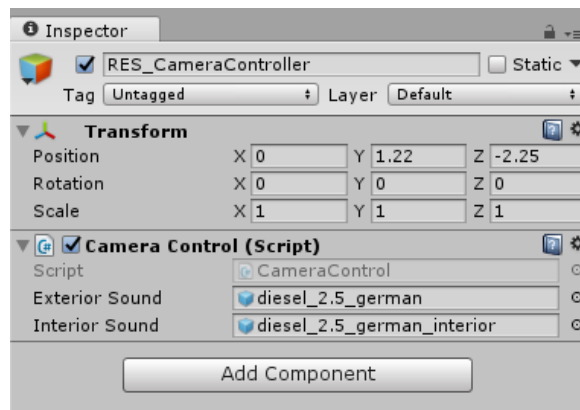
Now your car should look like this:



In your newly created gameobject attach "CameraControl.cs" script. (you can find it in here: ..\RealisticEngineSound\Assets\Scripts\Demo Scene Scripts\EdysDemoScripts)

Into this script attach your exterior and interior engine sound prefabs from your car.

It should look like this:



Positioning this gameobjects can make your car sound louder or less louder.

Now time to test it, press play and start changing camera views with the default change camera key. You can edit the default change camera key in "Camera Controller" gameobject's "VehicleCameraController.cs" script.

Setup for Realistic Car Controller

Youtube video url for this tutorial: <https://www.youtube.com/watch?v=VcvwsZiF7H4>

Import Realistic Car Controller and Realistic Engine Sounds.

Now import **RCC_RES-Plus.unitypackage** from the following folder:

..\RealisticEngineSound\ Assets For Vehicle Controllers\RCC V3\..

This unitypackage gives you prefabs and demo scenes for Realistic Car Controller.

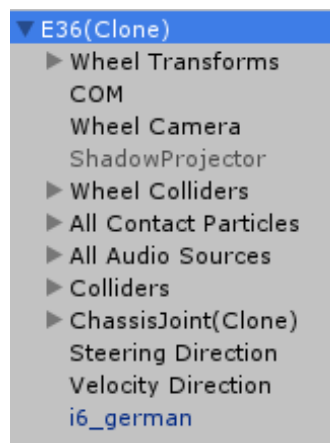
Open any Realistic Car Controller Scene, click on *Option Menu* and spawn a car. In this example I spawned E36 car.

Drag and drop one of my prefab for Realistic Car Controller on your car's game object. You can find prefabs for R.C.C. car in the following folder:

../RealisticEngineSound/Assets/Prefabs/RCC_V3_Prefabs

In this example I used i6_german prefab on my car game object.

RCC car gameobject should look like this after you dropped one of my prefab on it:



That's all, now your Realistic Car Controller car have a cool engine sound! Enjoy it! 😊

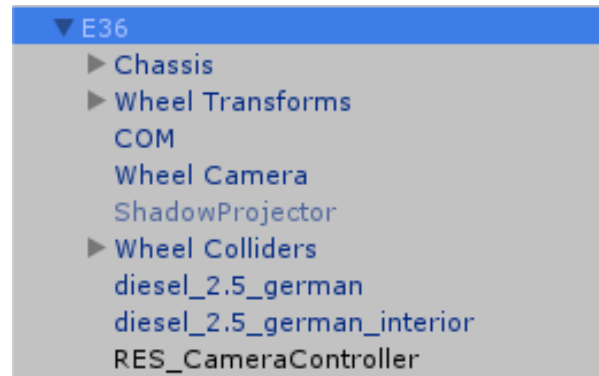
- Camera controller for Realistic Car Controller

Youtube video url for this tutorial: <https://youtu.be/VcvwsZiF7H4?t=86>

You can control interior and exterior sounds by changing camera view with the default RCC camera controls. All you need to do is just add a gameobject with my camera controller script to your car.

Add an engine pack with exterior and interior sounds to you RCC car. In this example I used the diesel prefab. Add a new gameobject to your car and name it to what you want. In this example I named it to "RES_CameraController".

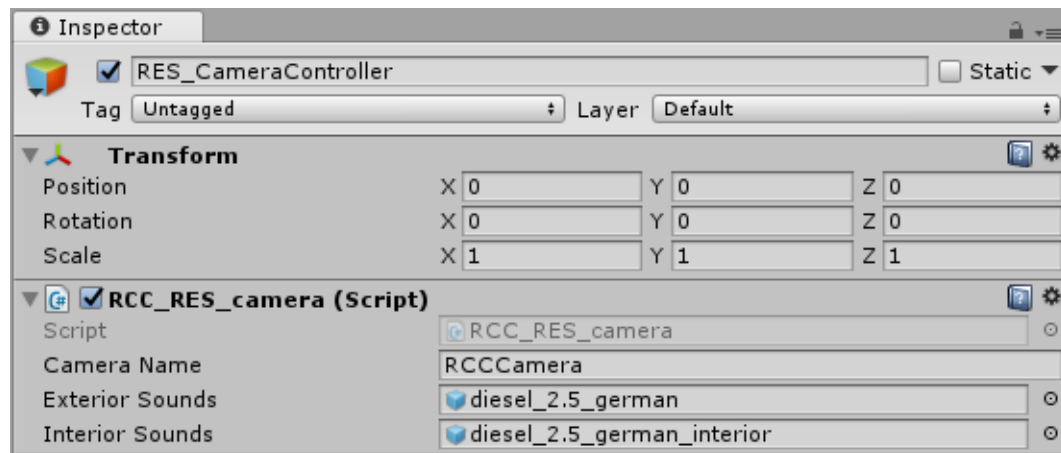
Now your car should look like this:



In your newly created gameobject attach "RCC_RES_camera.cs" script. (you can find it in here: ..\RealisticEngineSound\Assets\Scripts\Demo Scene Scripts\RCCDemoScripts)

Into this script attach your exterior and interior engine sound prefabs from your car.

It should look like this:



- **Camera Name:** RCC's camera controller name

Positioning this gameobjects can make your car sound louder or less louder.

Now time to test it, press play and start changing camera views with the default change camera key.

Setup for Randomation Vehicle Physics

Youtube video url for this tutorial: <https://www.youtube.com/watch?v=02JMdDAPsnE>

RVP simulates rpms very badly, it can get a bit better by tweaking the transmission's setting in your RVP car, but it never going to be as good as other car controller assets.

Import Randomation Vehicle Physics and Realistic Engine Sounds.

Now import **RPV_RES-Plus.unitypackage** from the following folder:

..\RealisticEngineSound\Assets For Vehicle Controllers\RVP2\..

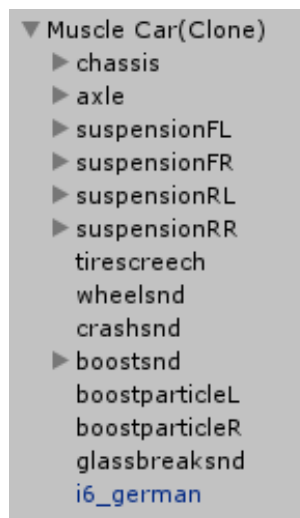
This unitypackage gives you prefabs and demo scenes for Randomation Vehicle Physics.

Open any Randomation Vehicle Physics Sample Scene.

Spawn a car, drag and drop one of my prefab for Randomation Vehicle Physics on your car's game object. You can find prefabs for R.V.P. car in the following folder:
../RealisticEngineSound/Assets/Prefabs/ RVP2_Prefabs

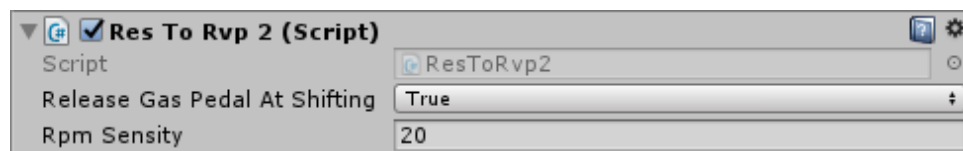
In this example I spawned *Muscle Car* and used *i6_german* prefab on my car game object.

RVP car gameobject should look like this after you dropped one of my prefab on it:



That's all, now your Randomation Vehicle Physics car have a cool engine sound, it's time to test it!☺

RVP to RES controller script settings:



- **Release Gas Pedal At Shifting (True or False):** if set to true off engine sounds will be played at shifting.

- **RPM Sensity:** sensity of detecting car's RPM

Setup for NWH1 and NWH2 Vehicle Physics

Youtube video url for this tutorial: <https://www.youtube.com/watch?v=LiigkmlRQWs>

Import NWH or NWH2 Vehicle Physics, set up to make it work and import Realistic Engine Sounds.

For **NWH2 Vehicle Physics** all the same steps will apply, the only difference is that instead of „NWH” text „NWH2” text is used.

Now import **NWH_RES-Plus.unitypackage** from the following folder:

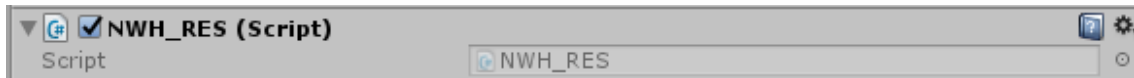
..\RealisticEngineSound\Assets For Vehicle Controllers\NWH\..

This unitypackage gives you prefabs and demo scenes for NWH Vehicle Physics.

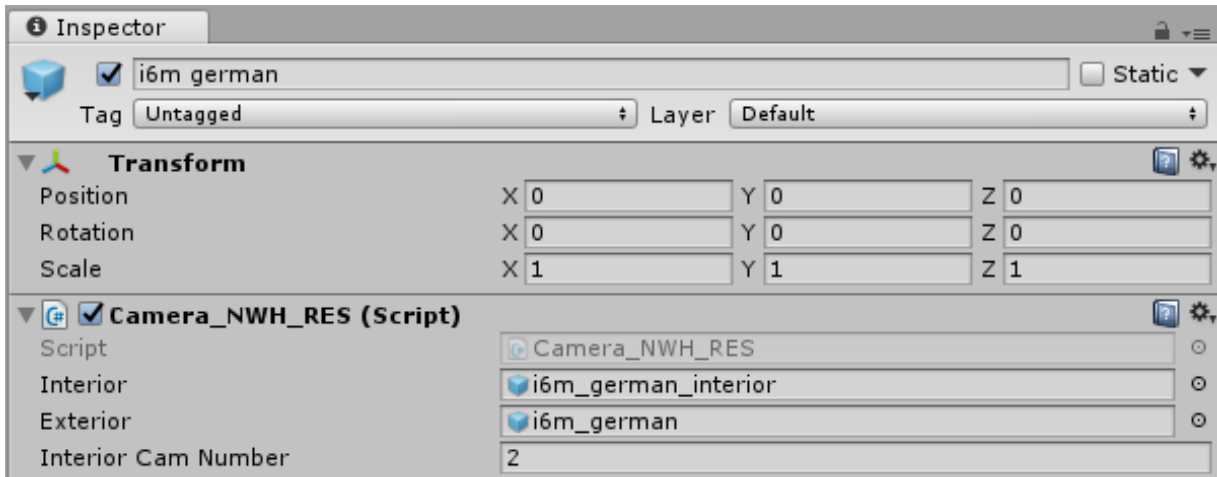
Open any NWH Vehicle Physics scene, drag and drop one of my prefab for NWH Vehicle Physics on your car’s game object. You can find prefabs for NWH car in the following folder:

../RealisticEngineSound/Assets/Prefabs/ NWH_Prefabs

NWH RES controller script:



Camera NWH RES controller script:



This prefabs are working with NWH’s camera system, automatically switch between interior and exterior RES sounds.

That’s all, now your NWH1 or NWH2 Vehicle Physics car have a cool engine sound! Enjoy it! 😊

Setup for Motorbike Starter Kit

Short Youtube video url for this tutorial. In this tutorial I'm using "Motorbike Engine Sounds" RES addon pack, but the usage of prefabs are the same without this addon pack:

<https://www.youtube.com/watch?v=Xddos137BBk>

Get Motorbike Engine Sounds - RES Addon Pack here: <https://goo.gl/LPkoZy>

Firstly import Realistic Engine Sounds and Motorbike Starter Kit assets and later import

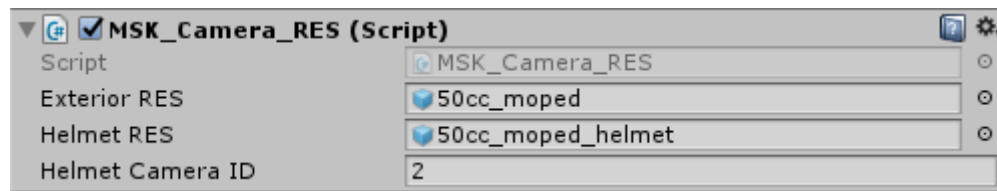
MSK_RES-Plus.unitypackage from

../RealisticEngineSound/ Assets For Vehicle Controllers\MSK\.. folder.

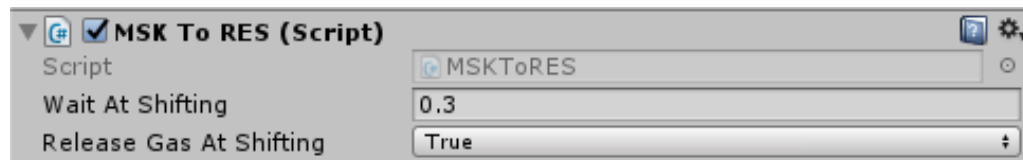
This import prefabs, scripts and demo scenes for MSK and RES.

Look for MSK-RES bike prefabs in ../RealisticEngineSound/Assets/Prefabs/MSK_Prefabs/Bikes folder.

Drag and drop one MSK-RES prefab on your MSK bike. This prefabs contain a controller script that swich between helmet and exterior camera view prefabs.



HelmetCameraID: is the number of helmet camera in your MSK gameobject.



WaitAtShifting: sets the waiting time in seconds for shifting.

ReleaseGasAtShifting: if set to True, off engine sounds will be played for "WaitAtShifting" seconds.

Setup for Vehicle Physics Pro

Firstly import Vehicle Physics Pro, Realistic Engine Sounds and later import **VPP_RES-Plus.unpackage** from ..\RealisticEngineSound\Assets For Vehicle Controllers\VPP

This import prefabs, scripts and demo scenes for VPP and RES.

Look for VPP-RES prefabs in ../RealisticEngineSound/Assets/Prefabs/VPP_Prefabs folder.

Drag and drop one VPP-RES prefab on your VPP vehicle. This prefabs contain a controller script that swich between interior and exterior camera view prefabs.

Set max rpm to match your car's rev limiter. If needed set the used RES prefab's *Pitch Multiplier* from 1.0 to 1.1 or 1.2 (depending on your taste).

Setup for Unity Car Pro

Firstly import Unity Car Pro, Realistic Engine Sounds and later import **UCP_RES-Plus.unpackage** from ..\RealisticEngineSound\Assets For Vehicle Controllers\Unity Car Pro

This import prefabs, scripts and demo scenes for UCP and RES.

Look for UCP-RES prefabs in ../RealisticEngineSound/Assets/Prefabs/UnityCarPro folder.

Drag and drop one UCP-RES prefab on your UCP vehicle. This prefabs contain a controller script that swich between interior and exterior camera view prefabs.

Setup for Driver (Traffic System)

Firstly import Driver (Traffic System), Realistic Engine Sounds and later import **Driver_RES-Plus.unpackage** from ..\RealisticEngineSound\Assets For Vehicle Controllers\Driver

This import prefabs, scripts and demo scenes for Driver and RES.

Look for Driver-RES prefabs in ../RealisticEngineSound/Assets/Prefabs/Driver folder.

Drag and drop the rightone Driver-RES prefab on your Driver vehicle. There are separete prefabs for car and bikes. This prefabs contain a controller script that swich between interior/helmet and exterior camera view prefabs.

Setup for iRDS

Firstly import iRDS, Realistic Engine Sounds and later import **iRDS_RES-Plus.unpackage** or import **iRDS_RES-Plus.unpackage** if you are using the source version of iRDS from:
..\RealisticEngineSound\Assets For Vehicle Controllers\iRDS

This import prefabs, scripts and demo scenes for iRDS and RES.

Look for iRDS-RES prefabs in ../RealisticEngineSound/Assets/Prefabs/iRDS_Prefabs folder.

Drag and drop one iRDS-RES prefab on your iRDS vehicle. This prefabs contain a controller script that swich between interior and exterior camera view prefabs.

Setup for MS Vehicle System - Free

Firstly import MSV-Free, Realistic Engine Sounds and later import **MSV-Free_RES-Plus.unitypackage** from ..\RealisticEngineSound\Assets For Vehicle Controllers\MSV-Free

This import prefabs, scripts and demo scenes for MSV-Free and RES.

Look for MSV_Free-RES prefabs in ../RealisticEngineSound/Assets/Prefabs/MSV folder.

Drag and drop one MSV-RES prefab on your MSV vehicle. This prefabs contain a controller script that swich between interior and exterior camera view prefabs.

These prefabs and demo scene should work with MSV paid version too after MSV_RES.cs, MSV_RES_mob.cs and MSV_Camera_RES.cs scripts got modified, rename „MSVehicleControllerFree” words to „MSVehicleController” in each above mentioned scripts.

Setup for Realistic Car Kit

Firstly import Realistic Car Kit, Realistic Engine Sounds and later import **RCK_RES-Plus.unitypackage** from ..\RealisticEngineSound\Assets For Vehicle Controllers\RCK

This import prefabs, scripts and demo scenes for RCK and RES.

Look for RCK-RES prefabs in ../RealisticEngineSound/Assets/Prefabs/RCK folder.

Drag and drop one RCK-RES prefab on your RCK vehicle. This prefabs contain a controller script that swich between interior and exterior camera view prefabs.

Setup for Universal Vehicle Controller

If you want to use Realistic Engine Sounds with Universal Vehicle Controller, import Universal Vehicle Controller (make sure you done all required steps to make UVC work), then import Realistic Engine Sounds and later **UVC_RES-Plus.unitypackage** or if you are going to use UVC "Without Dependencies" import **UVC-WD_RES-Plus.unitypackage** from:

..\RealisticEngineSound\Assets For Vehicle Controllers\UVC

This unitypackage contain demo scenes, scripts for demo scenes and prefabs for Universal Vehicle Controller. This prefabs are ready to use with Universal Vehicle Controller.

If you are going to use UVC with dependencies, then you need to do the following steps too:

UVC car will still play it's own engine sound, because it is using fmod and I not found any possibilities to turn it off inside the demo scenes without dissabling all other sounds too like surface sounds. If you found a better way or the asset got an update that will allow better sound customisation inside the demo scenes, let me know.

You can edit the fmod project to disable the stock engine sound or edit UVC's "CarSFX.cs" script by removing the following lines to stop sending rpm values to fmod, in this case the idle sound will still play in the background:

```
EngineEmitter.SetParameter (RPMID, Car.EngineRPM);
```

```
EngineEmitter.SetParameter (LoadID, Car.EngineLoad.Clamp (-1, 1));
```

At the time writing this tutorial, these line are 112 and 113. "CarSFX.cs" script can be found in: ..\UniversalVehicleController\Scripts\GamePlay\VehicleComponents\Car folder.

Setup for FGear Vehicle Physics

If you want to use Realistic Engine Sounds with FGear Vehicle Physics, import FGear Vehicle Physics, Realistic Engine Sounds and later **FGear_RES-Pro.unitypackage** from:

../RealisticEngineSound/Assets For Vehicle Controllers/FGear

This unitypackage contain demo scenes, scripts for demo scenes and prefabs for FGear Vehicle Physics. These prefabs are ready to use with FGear Vehicle Physics.

Look for FGear-RES prefabs in ../RealisticEngineSound/Assets/Prefabs/FGear folder.

Drag and drop one iRDS-RES prefab on your iRDS vehicle. This prefabs contain a controller script that swich between interior and exterior camera view prefabs.

Video tutorial: https://youtu.be/hcTzt7u_2IE

Set Up Your Own Engine Sound

Youtube video url for this tutorial:

<https://www.youtube.com/watch?v=xsLy18rokSk>

Create a new scene, add a new game object and attach Realistic Engine Sound script to your new game object.

Set audio clips, if you don't have your own, use audio clips from:

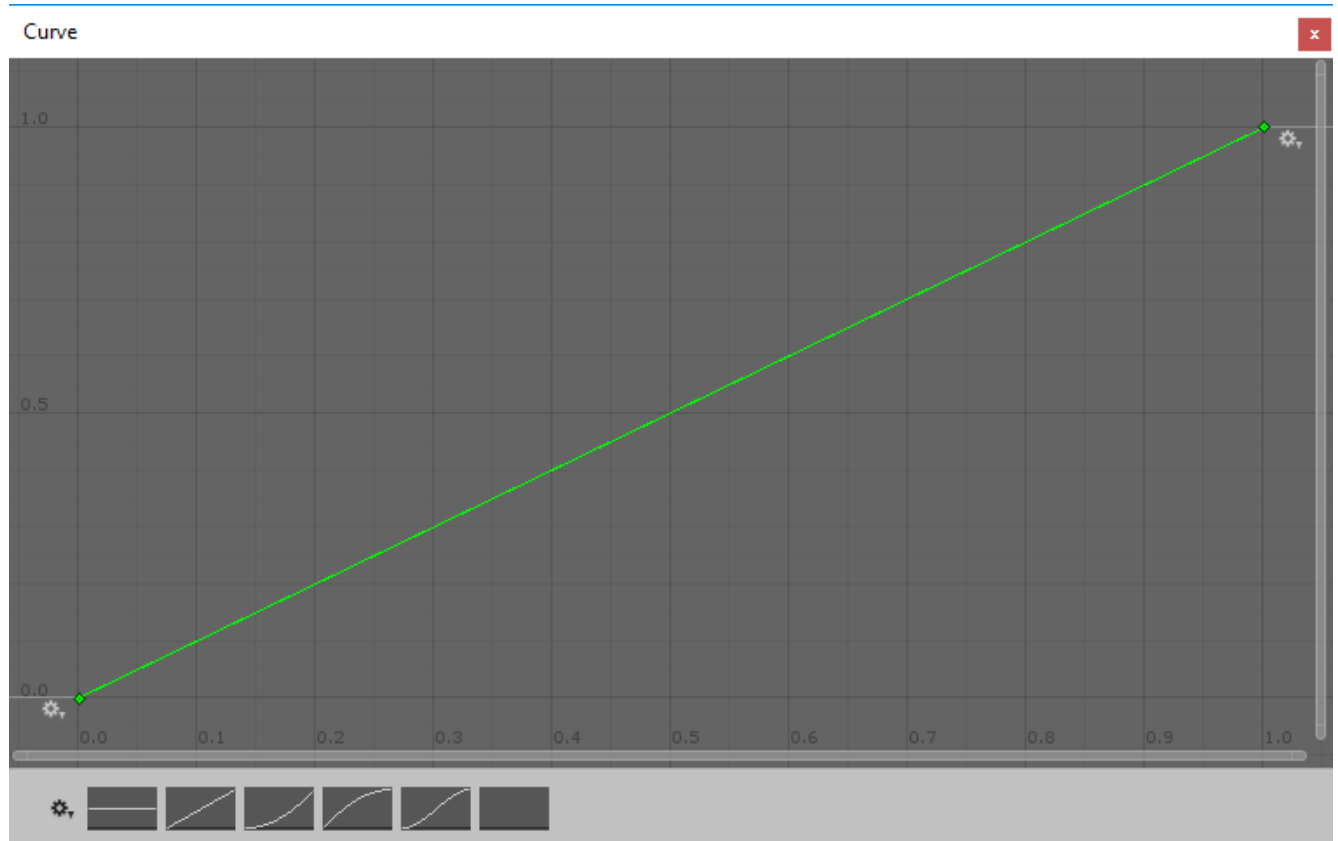
../RealisticEngineSound/Assets/Sounds/... and choose any folder that has engine names.

You can find Reversing Clips here:

../RealisticEngineSound/Assets/Sounds/Reversing

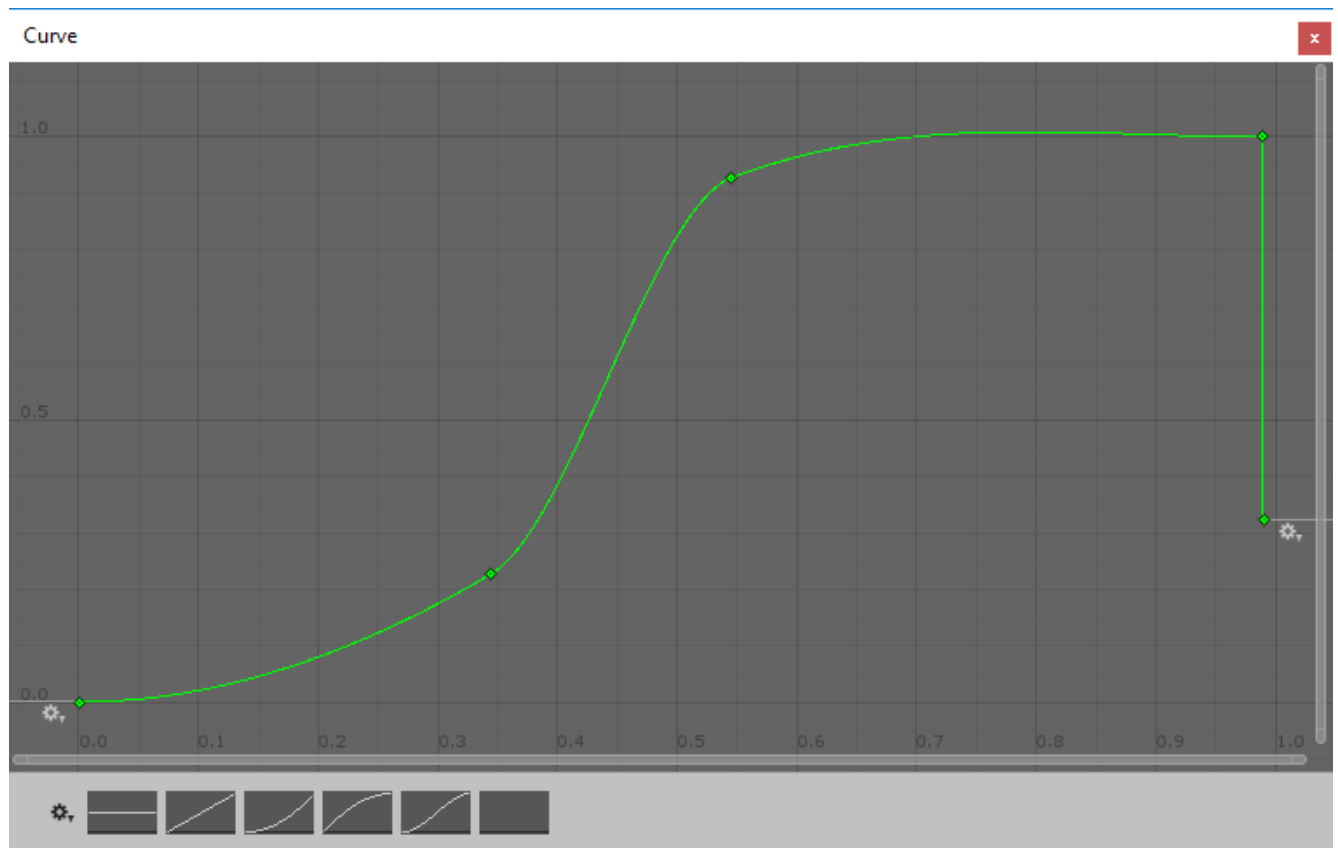
Set each audio clips Volume Curve and Pitch Curve settings.

For pitch Curve settings it's better to set it to look like this:



*Values from left to right do not set it to more than 1.0 value. Values more than 1.0 will never take effect.

For volume curve settings you need to try out a few settings that fits better for your audio clip. Bellow you can see volume curve's setting for high rpm sounds:



*Values from left to right do not set it to more than 1.0 value. Values more than 1.0 will never take effect.

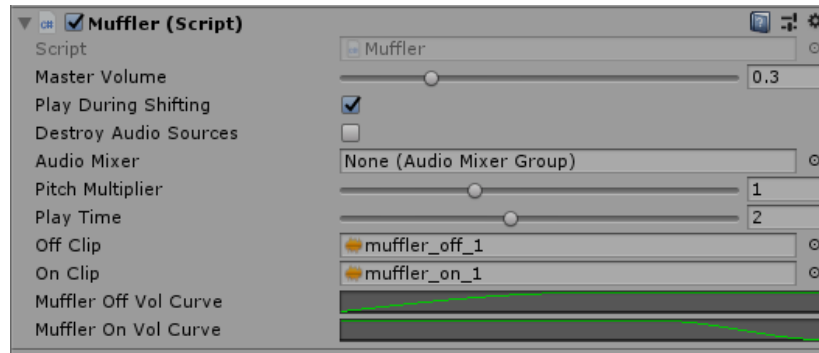
If you have struggles finding the best settings for your audio clips, look inside my prefab's settings, or change one of my prefab's audio clips to your audio clips – this is the fastest way to test your own audio clips.

If you have set up everything, press the play button and start increasing “Engine Current RPM” in Realistic Engine Sound script to test your engine sound.

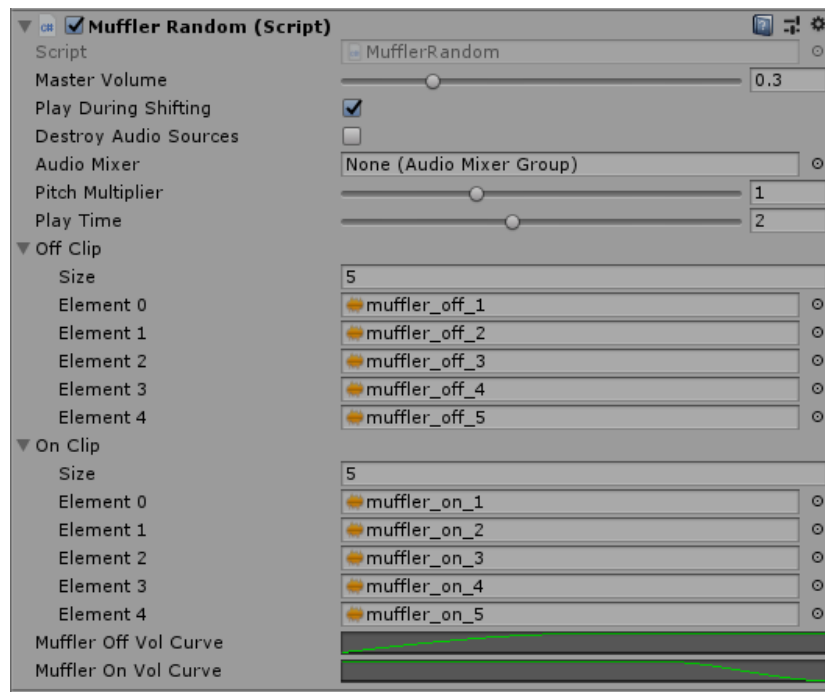
Don't forget to enable “Gas Pedal Pressing” to simulate accelerating sounds. 😊

Muffler Crackle Sound

Non random script:



Random sound clips script:

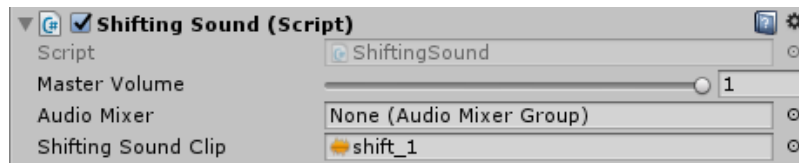


- **Master Volume:** sets the gameobject's maximum volume
- **Play During Shifting:** disabling this will play crackle sounds only when gas pedal is released
- **Destroy audio sources:** enable/disable destroying audio sources when they are not used
- **Audio Mixer:** add an audio mixer here to control all sound's volume at once. If set to none, it will use the engine prefabs's audio mixer (if the engine prefab have an audio mixer)
- **Pitch Multiplier:** multipli the prefab's maximum pitch value
- **Play Time:** the time for sound clips is played in seconds
- **Off Clip:** sound clip played for „Play Time” seconds when gas pedal is released
- **On Clip:** sound clip played for „Play Time” seconds when gas pedal is pressed
- **Muffler Off Vol Curve:** volume settings for muffler off clips
- **Muffler On Vol Curve:** volume settings for muffler on clips

Drag and drop this prefab on your RES prefab.

Shifting Sounds

Non random script:



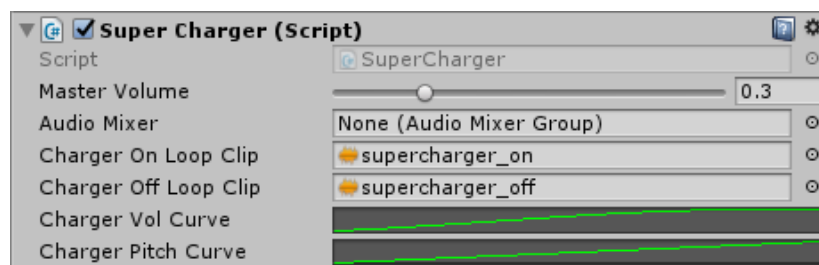
Random sound clips script:



- **Master Volume:** sets the gameobject's maximum volume.
- **Audio Mixer:** add an audio mixer here to control all sound's volume at once. If set to none, it will use the engine prefabs's audio mixer (if the engine prefab have an audio mixer).
- **Shifting sound clip:** the sound clip which is played when car is changing gears.

Drag and drop this prefab on your RES prefab.

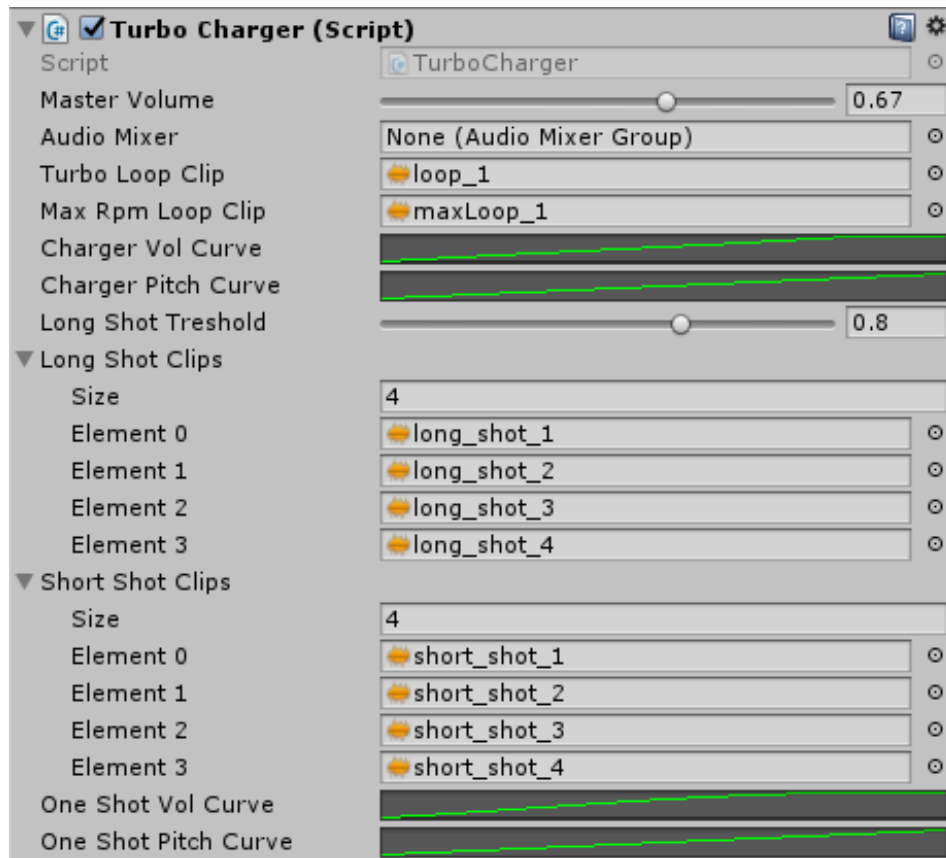
Supercharger Sounds



- **Master Volume:** sets the gameobject's maximum volume.
- **Audio Mixer:** add an audio mixer here to control all sound's volume at once. If set to none, it will use the engine prefabs's audio mixer (if the engine prefab have an audio mixer).
- **Charger On Loop Clip:** sound clip for supercharger on (gas pedal is pressing).
- **Charger Off Loop Clip:** sound clip for supercharger off (gas pedal is not pressed).
- **Loop Vol Curve:** sets the volume for loop clips.
- **Loop Pitch Curve:** sets the pitch for loop clips.

Drag and drop this prefab on your RES prefab.

Turbocharger Sounds



- **Master Volume:** sets the gameobject's maximum volume.
- **Audio Mixer:** add an audio mixer here to control all sound's volume at once. If set to none, it will use the engine prefabs's audio mixer (if the engine prefab have an audio mixer).
- **Turbo Loop Clip:** sound clip for turbo noise (gas pedal is pressing).
- **Max Rpm Loop Clip:** sound clip for turbo noise at rpm limiting.
- **Charger Vol Curve:** sets the volume for loop clips.
- **Charger Pitch Curve:** sets the pitch for loop clips.
- **Long Shoot Treshold:** sets the the value of at what rpm % Long Shots are started to play when gas pedal is released. Below this rpm % value Short Shots are played when gas pedal is released. (In the picture example you can see 80% value)
- **Long Shot Clips:** list of clips that are played at gas pedal release if current rpm's % is more than „Long Shot Treshold”.
- **Short Shot Clips:** list of clips that are played at gas pedal release if current rpm's % is less than „Long Shot Treshold”.
- **One Shot Vol Curve:** sets the volume for one shot clips (one shot clips are only played once when gas pedal is released).
- **One Shot Pitch Curve:** sets the pitch for one shot clips.

Drag and drop this prefab on your RES prefab.

Tips, Tricks and Optimisations

- To get more aggressive engine sounds, add an audio mixer to the RES prefab and add Disortion effect to the Master chanel. (this may eat some performance on mobile) Here is a video how to do this and what results it give: <https://www.youtube.com/watch?v=oiq6tQQuiJ0>
- On mobile devices you can use regular prefabs instead of mobile prefabs. Try using regular prefabs for player's car and mobile prefabs for opponent's car. Try out to see what FPS you get. If you do not get any performance loss, use regular prefabs for opponent's vehicle too, to get the most realistic engine sounds in your mobile game.
- In scenes with more vehicles, to save performance try reduncing „Max Distance” in RES prefabss to reduce active Audio Sources in your scene.
- Increase the „Optimisation Level” in RES prefab to reduce the used Audio Sources. This also reduce the quality of the RES prefab.
- Delete those engine sound packages that you may never use in your game to reduce your game's file size. Do the same for shifting, turbo, supercharger, etc sounds. This will reduce your compiled game's size with a few 10 or more MegaBytes. (good for mobile games).
- **[For experienced users]** Before doing this, backup your project. If you would like to optimise your game, edit your car controller scripts to remove the usage of it's stock engine sound's audio source. If needed remove the Audio Sources too by hand. If you don't know what lines you need to delete from your car controller script, delete the stock engine sound's Audio Sources in runtime and wait for the Errors. This errors will show you wich code lines are using the Audio Sources. But be carefull, do not remove lines that calculate the car's RPM. The less Audio Sources you have in your scene, the better performance you get on mobile. This modifications can give you errors inside RES_To... car controllers.cs script, because it will look for the stock Audio Sources to disable it. Remove this lines and done. Another thing is if you ever update your car controller to a newer version, this modifications may need to be done again. Now you completely removed your car controller's stock engine sounds and saved some performance.

License

You can use this asset for unlimited games.

For personal and commercial use.

You can't resell or redistribute the package or any single file from the package in any store!

Credits

All of the sound files are royalty free, recorded, created and mastered by me.

All of the scripts are written by me.

I would like to say a *Thank You* for friends and customers who sent me their recordings of vehicles and for the vehicle owners who let me to record their vehicle's engine sound and other sounds.

Some sound files are made from *dyno* videos found around the web.

Feel free to contact me if you have any questions or suggestions for this asset.

Youtube playlist with tutorials and sample videos:

<https://www.youtube.com/watch?v=GprY7DG9OZ8&list=PLYFtdNoo8S3j8qhJ5p11K4Wm0WsiluBqS&index=1>

Discussion Forum: <https://forum.unity.com/threads/released-realistic-engine-sounds.479120/>

Don't forget to write a review for my asset in the Unity Asset Store. Thank you!

Get small engine packs for RES Lite: <https://bit.ly/33z8DZ9>

Addon engine sound packs: <https://bit.ly/3km8rDI>

Upgrade to Pro version with a discount here: <https://goo.gl/DCTgsb>

Made by: Szlacki Attila

Contact: info@skrilstudio.com

Website: <http://skrilstudio.com>

Facebook Page: <https://www.facebook.com/yugelmobile>