

Sound

Sound system in NVP2 consists of SoundManager and multiple SoundComponents. Disabling SoundManager also disables all the SoundComponents.

- SoundComponent and SoundManager are VehicleComponents. Check [VehicleComponent](#) page for more info.
- Each SoundComponent (type of Vehicle Component) is responsible for one sound, e.g. EngineRunningComponent or EngineStartingComponent.
- AudioSources are not added manually but are instead generated by the script when scene is started. Some SoundComponents can have more than one AudioSource - e.g. wheel related SoundComponents have one AudioSource for each wheel.
- Each field affects only the vehicle to which the script is attached. To modify audio output for all the vehicles VehicleAudioMixer (VehicleAudioMixer.mixer) can be used.

Requirements

- Mixer field must have AudioManager assigned. By default VehicleAudioMixer will be used.

SoundComponent

SoundComponent inherits from VehicleComponent.
Check [VehicleComponent](#) page for more info.

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SoundManager

Sound Manager (LOD 0 1 2 3 **ENABLED**)

Master Settings

Master Volume: 0.42

Spatial Blend: 1

Mixer: VehicleAudioMixer

Interior Settings

Inside Vehicle:

Interior Attenuation: -7 dB

Low Pass Frequency: 3000 Hz

Low Pass Q: 1

Positioning

Engine Source Position X: 0 Y: 0.47 Z: 1.59

Transmission Source Pos X: 0 Y: 0.34 Z: 0.48

Exhaust Source Position X: 0 Y: 0.28 Z: -2

Other Sources Position X: 0 Y: 0.43 Z: 0.52

Enable gizmos and make sure the vehicle is selected in editor to be able to see the positions.

Components

Engine	Forced Ind.	Transmission	Suspension
Ground	Collision	Brakes	Blinkers
Horn		Reverse Beep	

Crash Component (LOD 0 1 2 3 **ENABLED**)

Base Volume: 1

Base Pitch: 1

Clips

- Element 0: Crash
- Element 1: CrashWallHit

If more than clip is supplied for sound components that require only one, a random clip will be selected each time sound is played.

SoundManager inspector.

SoundManager is the main class for handling sound. It contains all the global sound settings and also manages individual SoundComponents.

Also check [Sound](#) page.

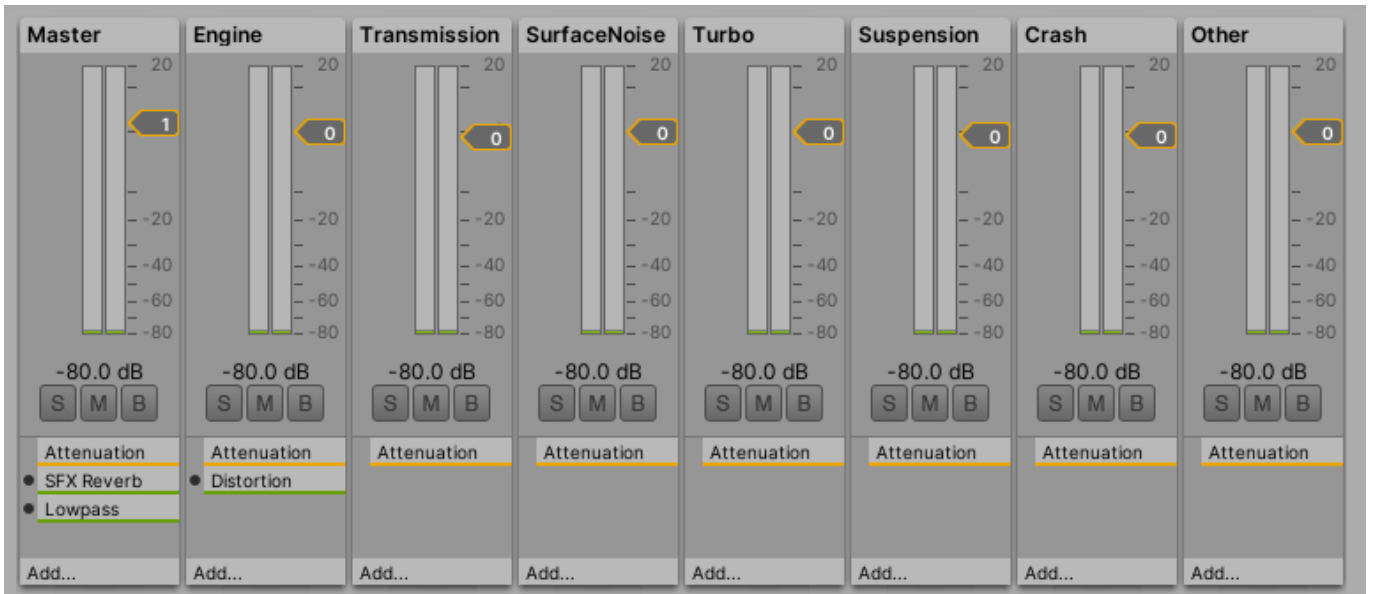
Settings

Master Settings

Master settings affect all the SoundComponents

Equalizer

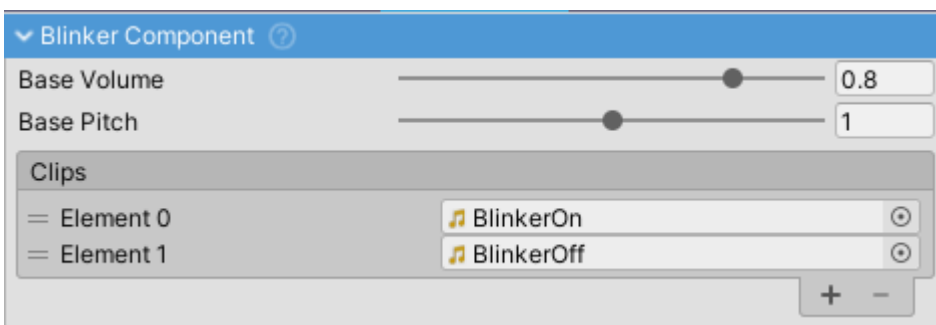
Each sound component belongs to one of the Audio Mixer groups: Engine, Transmission, SurfaceNoise, Turbo, Suspension, Crash or Other. Here you can add additional effects and modify the sound. One example of this is distortion which is added to the engine sound based on load through the Audio Mixer.



VehicleAudioMixer
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Available Sound Components

Blinker Component

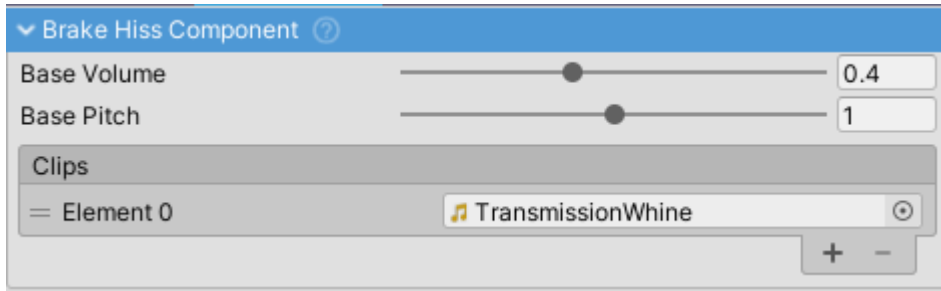


BlinkerComponent inspector.

- Click-clack of the working blinker.
- Accepts two clips, first is for the blinker turning on and the second is for blinker turning off.

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Brake Hiss

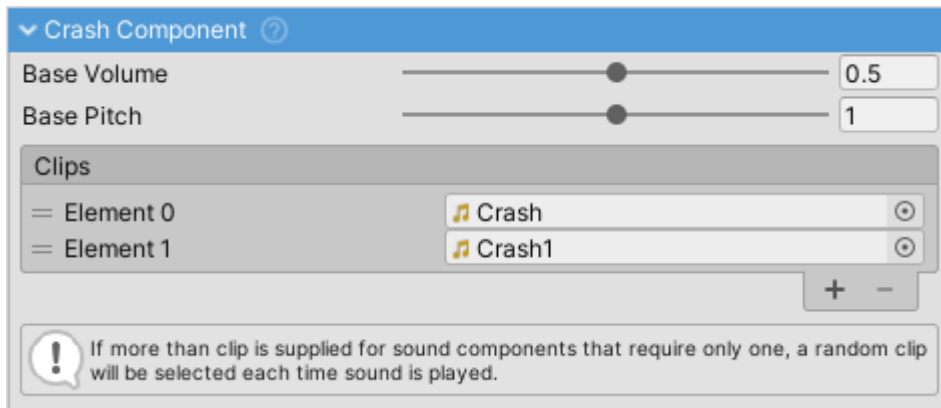


BrakeHissComponent inspector.

- Imitates brake hiss on vehicles with pneumatic brake systems such as trucks and buses.

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Crash

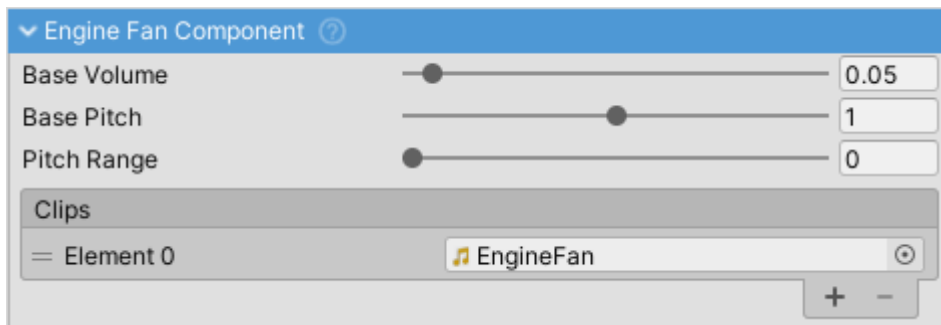


CrashComponent inspector.

- Sound of vehicle crashing.
- Supports multiple audio clips of which one will be chosen at random each time this effect is played.
- Volume is dependent on collision intensity. This can be adjusted through Velocity Magnitude Effect.
- Pitch is random. Randomness can be adjusted through Pitch Randomness field.

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Engine Fan



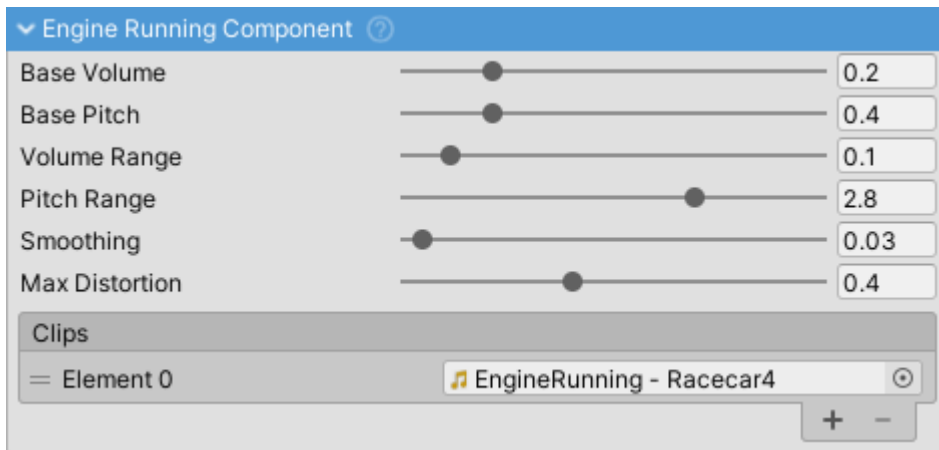
EngineFanComponent inspector.

EngineFanComponent is used to imitate engine fan running, the sound especially prominent in commercial vehicles and off-road vehicles with clutch driven fan.

- AudioSource of EngineFanComponent is positioned at Engine Position (*Settings* tab).

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Engine Running



EngineRunningComponent inspector.

EngineRunningComponent is a SoundComponent responsible for the engine sound. A pitch based approach using a single pre-recorded engine sound clip is used along with filters to achieve relatively realistic sound.

Big upside of this approach is that only a single clip is required which is ideal for small game studios, as opposed to layering approach where usually tens of clips of engine at different loads, positions and RPMs are used to achieve the engine sound effect. Of course, the downside is that realism suffers.

If you need the layering feature please make a feature request through support.

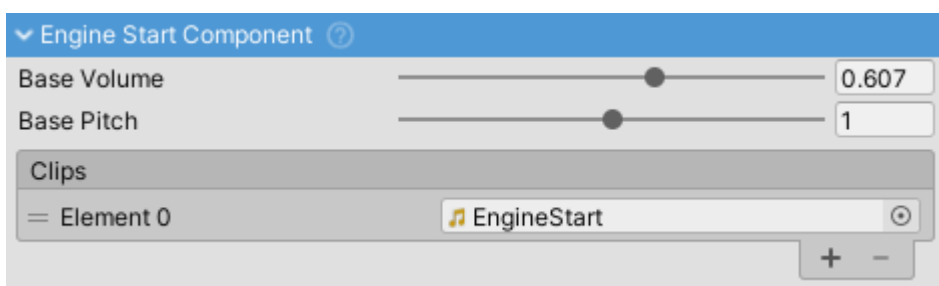
- AudioSource of EngineRunningComponent is positioned at Exhaust Position (*Settings* tab).

Notes

Distortion affects volume so when high levels of distortion are used it is usually a good idea to reduce volume range proportionately.

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Engine Start



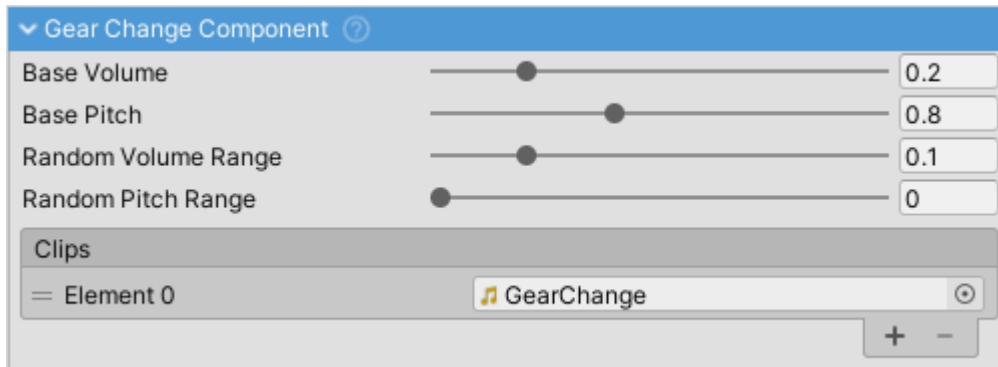
EngineStartComponent inspector.

- EngineStartComponent plays when starter is active.
- Starter settings can be adjusted under Powertrain ⇒ Engine tab.
- AudioSource of EngineStartComponent will be positioned at Settings ⇒ Engine

Position.

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Gear Change



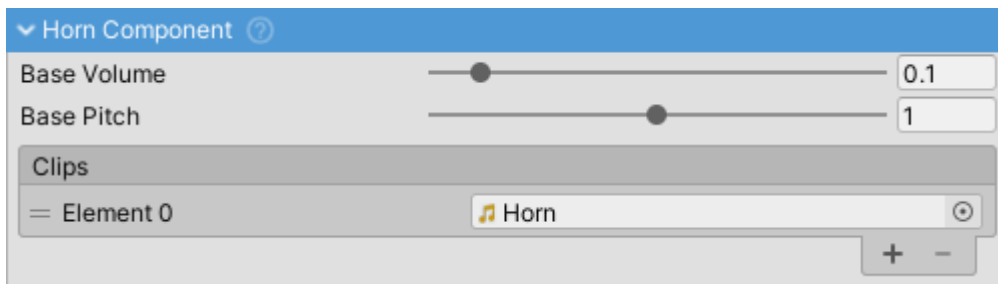
GearChangeComponent inspector.

Sound of changing gears.

- Supports multiple audio clips of which one is chosen at random each time the effect is played.
- AudioSource of GearChangeComponent is positioned at Settings ⇒ Transmission Position.

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Horn

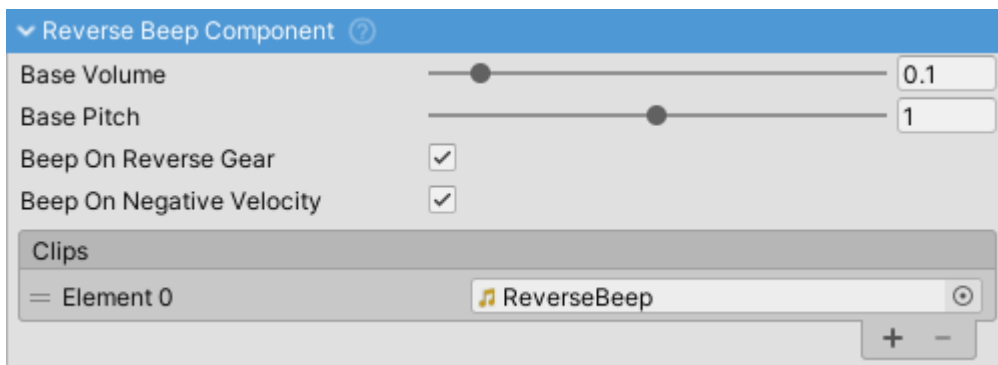


HornComponent inspector.

- Vehicle horn sound.

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Reverse Beep

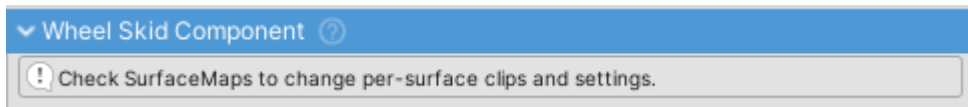


ReverseBeepComponent inspector.

- Beeping sound commercial vehicles make when driving in reverse.

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Skid

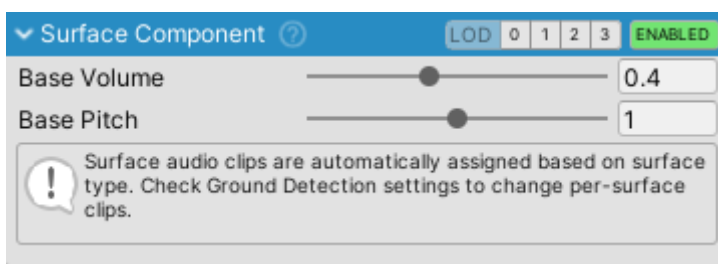


SkidComponent inspector.

- Sound produced by tire skidding/slipping over a surface.
- SkidComponent gets clips, volume and pitch settings from active SurfaceMap. TODO

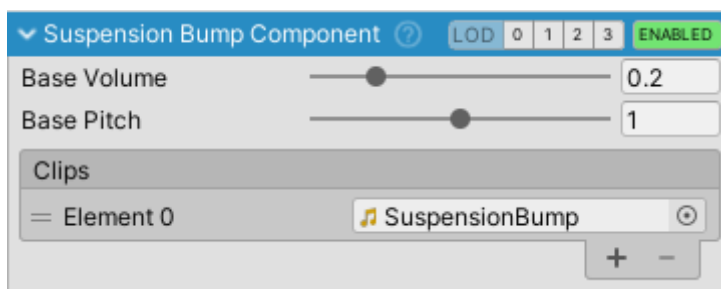
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Surface



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Suspension Bump

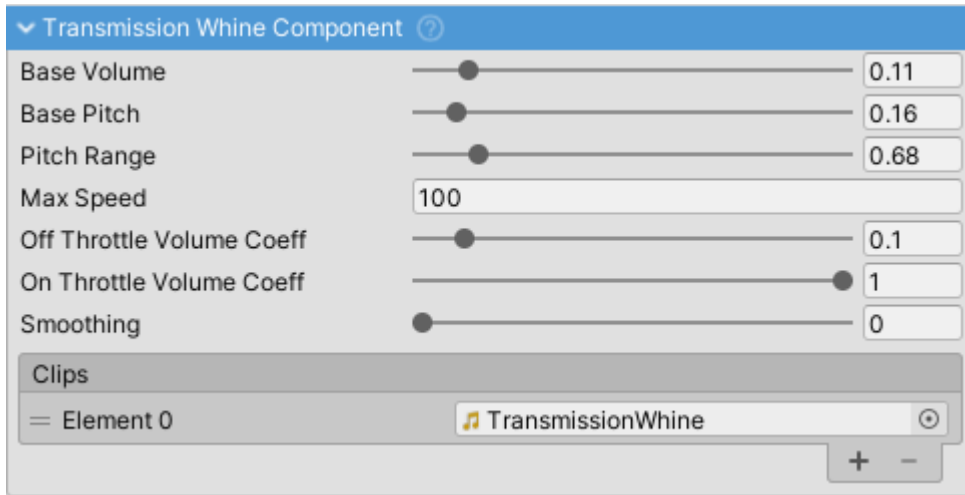


Sound of tire going over obstacle.

Each time the clip is played volume and pitch are changed to reduce repetitiveness. Multiple clips can also be used for the same reason.

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Transmission Whine



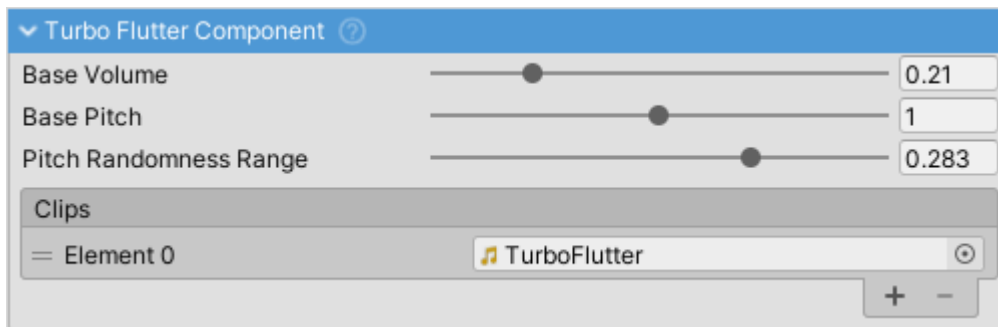
TransmissionWhineComponent inspector.

Sound of vehicle transmission. Most prominent on rally and racing cars with straight cut gears in the gearbox.

- AudioSource of TransmissionWhineComponent is positioned at Settings ⇒ Transmission Position.

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Turbo Flutter



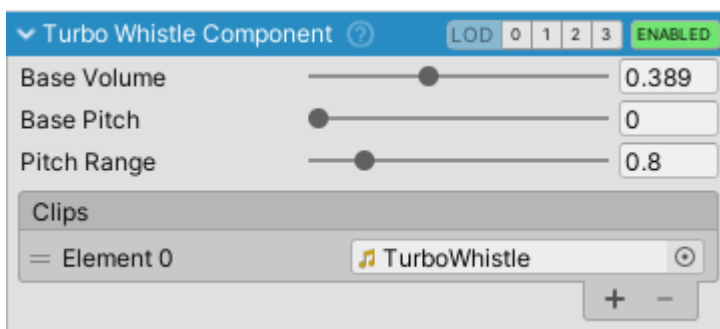
TurboFlutterComponent inspector.

Sound of a wastegate releasing air on turbocharged vehicles.

- Gets triggered after releasing throttle if there is adequate boost build up in ForcedInduction.
- AudioSource of TurboFlutterComponent is positioned at Settings ⇒ Engine Position.

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Turbo Whistle



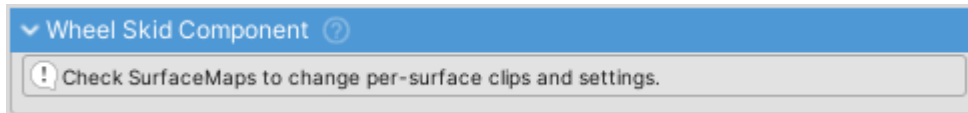
TurboWhistleComponent inspector.

Imitates high-pitched sound of forced induction.

- Can be used for both turbocharger and supercharger sound.
- Sound depends on [EngineComponent.ForcedInduction](#).
- AudioSource of TurboWhistleComponent is positioned at Settings ⇒ Engine Position.

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Wheel Skid

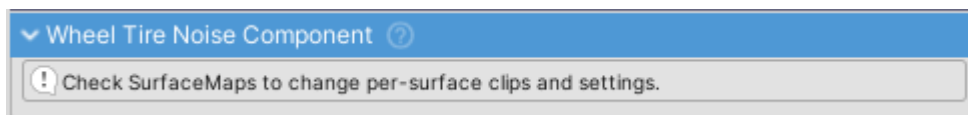


WheelSkidComponentInspector

- Sound produced by slipping/skidding over a surface.
- WheelSkidComponent gets clips, volume and pitch settings from active SurfaceMap. TODO
- An AudioSource gets generated for each WheelComponent.

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Wheel Tire Noise



WheelTireNoiseComponent

- Sound produced by tire rolling over a surface.
- WheelTireNoiseComponent gets clips, volume and pitch settings from active SurfaceMap. TODO
- An AudioSource gets generated for each WheelComponent.

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