

Settings ?

Actions

Validate Setup

Physics Sub-stepping

Low Speed Substeps 20

High Speed Substeps 20

Asleep Substeps 2

Physical Properties

! Physical Properties should only be changed out of play mode or through scripting before vehicle initialization.

Vehicle Dimensions X Y Z

! Make sure to use 'Calculate Inertia Tensor' after adjusting vehicle dimensions.

Center Of Mass X Y Z

Calculate Center Of Mass

Inertia Tensor X Y Z

Calculate Inertia Tensor

Mass kg

Drag

Angular Drag

Max Angular Velocity

Physics Material

State Settings

State Settings

> State Settings ?

LODs

! Individual LOD settings can be changed through StateSettings above.

Update LODs

Use Camera.main For LOD

! Enter play mode to view LOD debug data.

Positions

Engine Position X Y Z

Transmission Position X Y Z

Exhaust Position X Y Z

General

Longitudinal Slip Threshold

Lateral Slip Threshold

! Slip threshold values are used only for effects and sound and do not affect handling.

Constrain When Asleep

Settings tab.

Settings can be accessed through *Settings* tab in the VehicleController inspector.

Actions

- **Validate Setup** - when clicked `Validate()` function gets called on `VehicleController` and all of its `VehicleComponents`. If there are any issues with the vehicle setup a message will pop up in the console.

! [21:16:27] Sports Car: Validating VehicleController setup. If no other messages show up after this one, vehicle is good to go.

! [21:16:27] Audio mixer of 'SoundManager' is not assigned.

Example `Validate Setup` output with missing audio mixer.

Physical Properties

Physical properties section mostly relates to the vehicle `Rigidbody`. `Rigidbody` properties are set by `VehicleController` at start. Changing them after `VehicleController` has been initialized will have no effect. If you need to do that change the values of the `Rigidbody` directly from your script.

- **Vehicle Dimensions** - dimensions of the vehicle in meters. Width x Height x Length. Has impact on aerodynamic drag calculation if `Aerodynamics` module is active.
- **Inertia Tensor** - inertia tensor of the vehicle. Unity calculates inertia of `Rigidbody`s as if they are solid (i.e. have uniform density). Cars have a lot of quite heavy parts and a lot of empty space and therefore custom inertia calculation is required. Click *Calculate Inertia Tensor* button to automatically calculate inertia. If you want the vehicle to have more rotational inertia around any of the three rotation axes increase the value for that axis. I.e. increasing Y will make the vehicle resist steering more.
- **Center Of Mass** is a point relative to the vehicle's coordinate system at which the center of mass of the `Rigidbody` will be. There is a gizmo of a weight at the center of mass position. Longitudinal positioning of center of mass heavily affects vehicle handling. Avoid using high centers of mass.
- **Calculate Center Of Mass** will auto-center center of mass to be exactly between the wheels. This is a good starting point but does not guarantee the best weight distribution and should be manually tweaked for best results.

Positions

- Positions determine the location of different vehicle parts. These positions are used for positioning sound sources, effects, etc.
- Coordinates are in local space.

Multiplayer

- **Multiplayer Instance Type** determines if the current vehicle instance is `Local` (i.e. controlled by a local player) or `Remote` (i.e. controlled by another player over network).

General

- **Longitudinal Slip Threshold** and **Lateral Slip Threshold** determine the amount of slip a wheel can have before it is considered to be slipping/skidding. Most sounds and effects will not trigger while the slip value is below the threshold value.

- Use `Low Speed Fix` - if true drag will be added to RigidBody when vehicle velocity is ~ 0 to prevent vehicle from creeping on slopes due to the nature of slip calculation.

From:

<http://nwhvehiclephysics.com/> - **NWH Vehicle Physics 2 Documentation**

Permanent link:

<http://nwhvehiclephysics.com/doku.php/Setup/Settings>

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