
Subject: I need information on how vehicle movement works

Posted by [jonwil](#) on Wed, 19 May 2004 01:45:24 GMT

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i.e. all the wheel bones etc.

What I need is complete information such as "rotate the wheel bone 20 degrees around the X axis every 30 seconds then rotate the wheel bone 20 degrees around the Y axis every 5 seconds" or something.

i.e. all the info needed to take a renegade vehicle and make it move "realisticly" (in the renegade context) across the screen at a certain speed. (whichever speed is easiest to animate will do)

Subject: I need information on how vehicle movement works

Posted by [gibberish](#) on Wed, 19 May 2004 07:17:14 GMT

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Dunno If this will help you much, but I might as well get the ball rolling:

If a vehicle is moving in a straight line we have:

$$\text{Circumference} = \text{Pi} * \text{WheelRadius} * 2$$

- The Distance a vehicle travels

$$\text{Distance} = \text{Rotations} * \text{Circumference}$$

- Also Distance is related to speed

$$\text{Distance} = \text{Speed} * \text{Time}$$

Note: Speed is in GameUnits per second.

- So putting this together we get:

$$\text{Speed} * \text{Time} = \text{Rotations} * \text{Pi} * \text{WheelRadius} * 2$$

- However time is determined by the interval between the frames.

$$\text{Time} = 1 / \text{FPS}$$

- So we now have

$$\text{Speed} / \text{FPS} = \text{Rotations} * \text{Pi} * \text{WheelRadius} * 2$$

- So re-arranging for rotations we get
$$\text{Rotations} = \text{Speed} / (\text{FPS} * \text{Pi} * \text{WheelRadius} * 2)$$

Now you can just multiple Rotations by 360 to get Degrees or 2 Pi for Radians.

Note: If you use Radians you can elimiate Pi from the calculation completely:

$$\text{RadiansPerFrame} = \text{Speed} / (\text{FPS} * \text{WheelRadius})$$

Subject: I need information on how vechicle movement works
Posted by [jonwil](#) on Thu, 20 May 2004 04:51:46 GMT
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That doesnt help

I need to know in terms of the various bones Renegade uses for wheels.

Subject: I need information on how vechicle movement works
Posted by [Slash0x](#) on Thu, 20 May 2004 15:36:59 GMT
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jonwilThat doesnt help

I need to know in terms of the various bones Renegade uses for wheels.
WheelC01R, WheelC02R, WheelC03L, and WheelC04L for center of the wheel bones.

WheelP01R, WheelP02R, WheelP03L, and WheelP04L for the bottom of the wheel bones.

I'm not at home, so the above is guessing, but I'm pretty sure about it.

Subject: I need information on how vechicle movement works
Posted by [gibberish](#) on Thu, 20 May 2004 17:06:30 GMT
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Slash0x
WheelC01R, WheelC02R, WheelC03L, and WheelC04L for center of the wheel bones.

Are all the center bones Axis aligned so you just do a rotation about the Y-Axis to spin the wheels?

Subject: I need information on how vechicle movement works

Posted by [laeubi](#) on Thu, 20 May 2004 17:10:48 GMT

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Vehicles.doc and the tuts on Renhelp tell you all you need about the bones.

Subject: I need information on how vechicle movement works

Posted by [Slash0x](#) on Thu, 20 May 2004 19:39:16 GMT

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LaeubiVehicles.doc and the tuts on Renhelp tell you all you need about the bones.

<http://renhelp.co.uk/?tut=15>

Viola!! The vehicle tutorial.
