Kerbal Space Program - Bug #1141

Rover Wheel Traction Problems

07/27/2013 02:56 AM - Candre

Status:	Moot	**Start date:**	07/27/2013
Severity:	Low	**% Done:**	0%
Assignee:			
Category:	Physics		
Target version:			
Version:	0.21.1	**Language:**	English (US)
Platform:	Windows	**Mod Related:**	No
Expansion:			

Description

What happens:
A. Stock rover wheels exhibit noticeable oscillation and poor traction on certain surfaces.
B. Stock rovers appear to propel themselves without power on these same surfaces.

http://imgur.com/a/wY1Nj <- This album covers the experiment I performed. Observations/notes within.

How to reproduce:

- Land a rover at the island runway, and drive to the location seen in the album. The attached persistence file contains the pictured setup.
- Accelerate forward, toward the base of the mountain. The rover should experience rapid deceleration before reaching the base, along with oscillation.
- Continue up the cliff face until the rover is at the summit.
- Drive forward, and then let go of the controls. It should be flung off the mountain, despite the inclination of the surface. The previous surface does this to a lesser extent.

Notes:

- This appears to happen near, but not on, steep inclines. Certain locations on the mountain range west of KSC and the runway island have the same effect.
- Terrain detail was on 'Medium' during testing.
- No plugins/mods; vanilla install.

History

#1 - 07/27/2013 11:46 AM - Anonymous

- Severity changed from High to Low

#2 - 08/16/2013 05:58 PM - Tiron

This has been a problem since I first started using rover wheels in 0.19 (which is when I first reported it). From what I've seen, it seems to be an interaction between problems with the terrain and problems with Unity's wheel system. TohouTorpedo's Modular Multiwheels exhibits it as well. I can't recall the DEMVs ever exhibiting similar behavior, and I was using them prior to 0.19 (and before them, the Bigtrak, which didn't have a suspension and had no problems at all.)

The gist of it is that the suspension is responding to non-visible variations in the terrain, and exerting anomalous forces on the rover itself as a result. Pushing it down or pulling it up, depending on the direction of the error in the visible terrain mesh. The segments that push the rover down have no adverse effects. Segments that pull the rover up, well, it basically pulls the rover partially off the ground, probably by the same method that the Infiniglider exploit uses. This causes extreme instability and anomalous steering behavior, making rover use in area with that problem somewhere between 'annoying' and 'impossible' depending on the steepness of the terrain.

Trick being, the new terrain is VASTLY worse about it than the old. The bad segments are both more common and larger. This makes serious rover use almost impossible, because it's not a matter of IF it will get turned over and break, it's a matter of WHEN. Specifically, when you hit one of the 'pull' terrain segments on a steep enough hill.

It's not a minor thing at all, and I'm frankly shocked that it hasn't even been touched in the last several updates, despite being reported and discussed over and over and over. On a personal level, it's basically stopped my gameplay, because the severe instability this problem causes is keeping me from getting to the places I want to get to, and has done ever since I started trying to build rovers.

#3 - 05/25/2014 03:53 PM - q2dm1

- Status changed from New to Confirmed

- % Done changed from 0 to 10

I noticed these issues sounded familiar with what I was experiencing. On the Mun, my rover was constantly hitting rough features in the terrain. I though it'd might be my graphics card not displaying these areas correctly. But I got to watching the suspension as I drove. Whenever the wheels left the ground and came back down, the suspension wouldn't retract. It drove as if it were going over a sheet of ice with ice wheels with the terrain features of the rain forest (bumpy). Whenever I met an upward incline (relative to my rovers orientation), the suspension would retract and it would smooth out.

#4 - 07/27/2015 05:55 PM - Squelch

- Platform Win32 added

- Platform deleted (Windows)

#5 - 07/17/2016 09:30 AM - TriggerAu

- Status changed from Confirmed to Needs Clarification

- % Done changed from 10 to 0

#6 - 07/17/2016 09:42 PM - Claw

- Status changed from Needs Clarification to Moot

- % Done changed from 0 to 100

- Platform Windows added

- Platform deleted (Win32)

Files

persistent.sfs	163 KB	07/27/2013	Candre
output_log.txt	468 KB	07/27/2013	Candre
settings.cfg	20.8 KB	07/27/2013	Candre