

Kerbal Space Program - Bug #13276

Rotation on roll axis after Max Timewarp on launchad

11/21/2016 09:21 AM - Daveroski

| | | | |
|------------------------|-----------|---------------------|--------------|
| Status: | Confirmed | Start date: | 11/21/2016 |
| Severity: | Low | % Done: | 10% |
| Assignee: | | | |
| Category: | Physics | | |
| Target version: | | | |
| Version: | 1.2.1 | Language: | English (US) |
| Platform: | Linux | Mod Related: | No |
| Expansion: | | | |

Description

I have just started designing a ship. Throwing ideas around.
To test it, I launch it and test it right there on the launchpad.
I launched it without fuel and began testing equipment ratios.

After it had filled up with fuel at maximum timewarp I stopped the timewarp and noticed that the ship was visibly rotating on the launchpad.
See attached images.

Restarting and stopping timewarp does not stop the rotation again.

It only seems to be noticeable when the ship is full of fuel. Craft file also attached.

I quit my career game completely and after a few minutes restarted the game and reloaded my save. Persistent save game attached.
I went into the VAB and reloaded my saved craft.
I ensured it was already full of fuel and launched it again.
I went to Max Timewarp for just a couple of seconds and returned to normal speed.
The rotation persists and so is repeatable. Now logged as a bug.

History

#1 - 11/21/2016 09:36 AM - Daveroski

- File *KSP.log* added

#2 - 11/21/2016 09:40 AM - Daveroski

- File *Player.log* added

#3 - 11/24/2016 12:39 PM - Daveroski

After some experimentation I may have found the root cause of the rotation.
The LT-2 Landing strut.
I have performed tests on different craft using this strut.
It seems that with a lower mass the effect is much reduced and possibly unnoticeable.
It can clearly be seen using just the second largest 2.5 LOX tank, a lander pod and 4 LT-2 Landing struts.
I experimented by adding radial tanks with the LT-2 landing struts attached to them and saw the effect much more clearly.

#4 - 11/24/2016 12:43 PM - Daveroski

I have also found that even a single step of timewarp can start the effect and it does not need to be Max timewarp at all.

#5 - 11/24/2016 01:38 PM - Daveroski

Upon further testing it seems that the LT-1 Landing strut is also affected albeit to a seemingly lesser degree.
The only thing I can think of that may be causing this problem is the autostrut.
I have noticed that when it auto-struts to the heaviest component and these components are in symmetry that the autostrut seems to strut itself asymetrically to the nearest and furthest 'heaviest' object.
The formation produced is then
This could cause stresses that when taken over time could cause the rotation of the craft. Similar to a dual-band metamaterial absorber.
I suppose this could be setting up a resonance causing the rotation.

#6 - 11/24/2016 01:42 PM - Daveroski

In my above statement I was going to say 'The formation produced is then similar to a dual-band metamaterial absorber' and in trying to make it easier to read, I made it more complicated than it should be. My apologies.

#7 - 11/27/2016 08:12 AM - AlffromKerbal

- Status changed from New to Confirmed

- % Done changed from 0 to 10

I think this is the same issue as [#13250](#) - maybe related to [#13080](#) ?

Heavy masses seem to show this effect. Maybe some physical relation to planetary rotation?

(Another post about this [#13413](#))

#8 - 12/17/2016 04:33 PM - Daveroski

Use girder instead of legs, it doesn't happen. Use legs, it happens. I think we can narrow it down right there.

Files

| | | | |
|-------------------------|---------|------------|-----------|
| screenshot25.png | 1.53 MB | 11/21/2016 | Daveroski |
| screenshot26.png | 1.58 MB | 11/21/2016 | Daveroski |
| screenshot27.png | 1.47 MB | 11/21/2016 | Daveroski |
| screenshot28.png | 1.49 MB | 11/21/2016 | Daveroski |
| screenshot29.png | 1.49 MB | 11/21/2016 | Daveroski |
| screenshot30.png | 1.5 MB | 11/21/2016 | Daveroski |
| Self Refueler 02a.craft | 102 KB | 11/21/2016 | Daveroski |
| persistent.sfs | 3.85 MB | 11/21/2016 | Daveroski |
| KSP.log | 225 KB | 11/21/2016 | Daveroski |
| Player.log | 527 KB | 11/21/2016 | Daveroski |