

Kerbal Space Program - Bug #9338

Landing gear and legs clipping/popping with ground.

04/20/2016 05:55 AM - orcaman98

Status:	Confirmed	Start date:	04/20/2016
Severity:	Normal	% Done:	10%
Assignee:			
Category:	Physics		
Target version:			
Version:	1.1.0	Language:	English (US)
Platform:	Windows	Mod Related:	No
Expansion:			

Description

Landing gear and legs shift suddenly just before reaching full extension when opening, and, more problematically, kind of pop when beginning to close, causing the craft to jump. Tested with all legs, and small retractable wheels. Small wheels and legs appear fairly normal during this, but medium and large legs appear to clip through the ground at full extension. Happens on launchpad, runway, and ground. Doesn't seem to be caused by legs being overloaded, although a higher leg-to-weight-ratio causes a more dramatic hop.

Also affects rovers which are already on wheels, and then extend legs to raise themselves. In this case, once the legs have clipped through the ground, the rover can drive on its wheels again, though this does not affect the tiniest legs.

To reproduce: create craft such as probe core + legs, and launch with legs up or down, then toggle gear states.

Legs also clip when landing a craft whose legs are already extended. No popping occurs when legs are locked during takeoff or landing, but craft will sit lower than it ought to.

Could the collider be moving between the end/beginning of the animation, and the "locked" position?

History

#1 - 04/20/2016 04:19 PM - dawnroselyn

Looks like the issue is with the collider. I modified the cfg file for the LT1 leg from piston to leg, and it seemed to fix the problem for the LT1 landing leg.

#2 - 04/21/2016 05:52 PM - grey_ghost

- Status changed from New to Confirmed

- % Done changed from 0 to 10

#3 - 04/21/2016 05:53 PM - grey_ghost

Also present on Linux.

#4 - 07/17/2016 09:46 AM - TriggerAu

- Status changed from Confirmed to Needs Clarification

- % Done changed from 10 to 0

#5 - 08/05/2016 11:06 AM - orcaman98

I'll reconfirm.

#6 - 08/06/2016 07:12 AM - orcaman98

- Status changed from Needs Clarification to Updated

- % Done changed from 0 to 10

The (what I think was) ground-clipping problem appears to be solved, though the movements of the colliders or suspension could still use some work. Craft will move abruptly near the closing end of the animation on the struts/legs, and near the full-open end of the animation on wheels, exception being the smallest struts behaving the same way as the wheels. They're still quite jumpy. This could also be due to the implementation of the springiness of the system. Probably need to calculate spring sag before opening is complete, and scale the opening animation to fit.

Also, on vehicle launch, and probably related to springs, craft on legs start low, then jump up, while craft of small wheels start high, then sag down. Again, the LT-05s seem to follow the pattern of the wheels. Medium folding gear, I'm not sure, and large gear seem to act like the legs, starting low, with the wheels appearing below the surface, and then jumping on top shortly after loading. Large gear, again pop right at the full-open end of the animation.

Also, launching with wheeled gear up has the craft start at the height it would rest with gear at full extension and fall. Even I struggle to come up it a scenario which would require this, but I'm sure it could still ruin somebody's day. SOMEONE will find a way. Anyway, a few issues of how launchpad position is determined relating to suspensions and open/close states.

TL;DR It doesn't send you flying into the air anymore, but it's still messy. To test, put movable legs or gear on a pod, and raise and lower while sitting on the pad. I used the HECS-2, and some girders when testing wheels.

And well done, dawnroselyn.

#7 - 08/07/2016 03:49 AM - TriggerAu

- Status changed from Updated to Confirmed

Marking this one confirmed and will put it in the list for the wheels

#8 - 09/23/2016 11:20 AM - orcaman98

Do I understand correctly that this has been fixed in 1.2? Haven't actually had time to play it yet. No Bughunt for me, I suppose.

Files

Bug craft.craft	35 KB	04/20/2016	orcaman98
Bug rover.craft	45.2 KB	04/20/2016	orcaman98
hopping.jpg	78.5 KB	04/20/2016	orcaman98
rolling.jpg	102 KB	04/20/2016	orcaman98