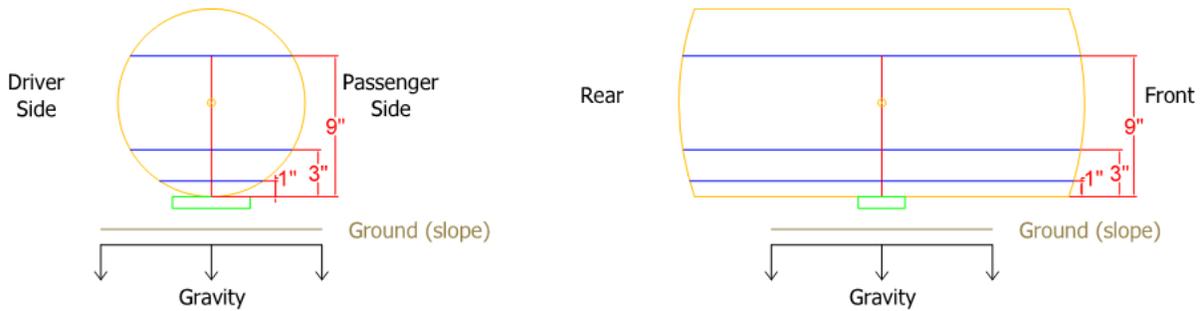


# How Much Does It Matter If Your Propane Tank Isn't Level

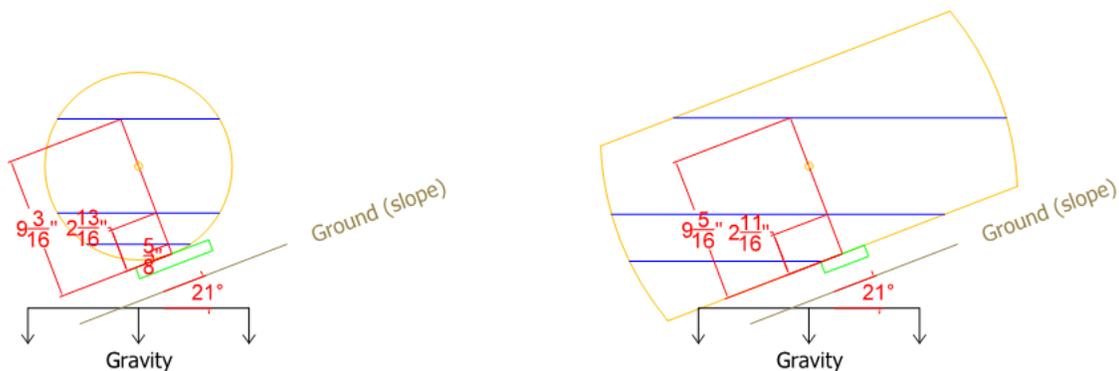
I was curious: if my RV is parked on a slope, what will the effect be on the measurement of its propane level? My Class C motorhome has a 13-gallon propane tank mounted horizontally in the middle of the passenger side that is 12 inches in diameter. I've affixed a Mopeka XL sensor to the bottom center. The Mopeka app will report the propane level in percent, inches, or centimeters and my RV Whisper records the level over time.

To keep things simple, I decided to assume that the slope would occur in one of two axes, side-to-side or front-to-back. Here, in two sections, is what my tank setup looks like when the motorhome is on level ground.



The tank is orange and the XL sensor is green. The blue lines represent 3 levels of propane at 1, 3, and 9 inches.

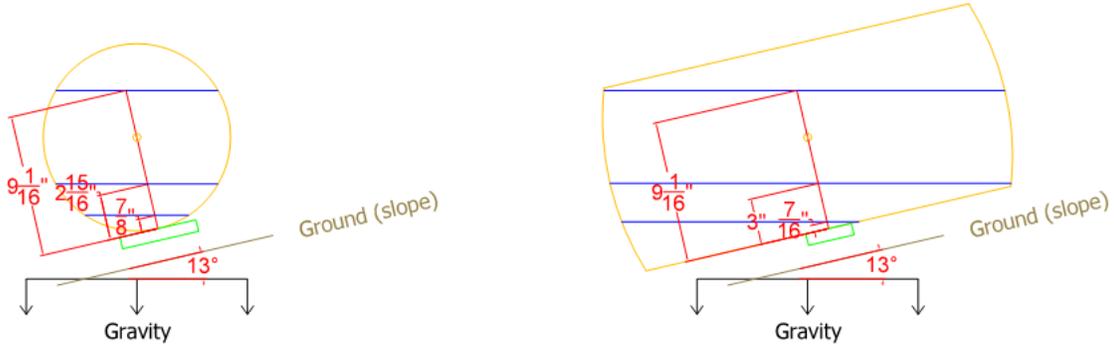
To find an extreme example of slope, I looked up the Guinness Book of World Records steepest street (in New Zealand). But I used one they mentioned in Wales that was even steeper (but cheated) at 37.45% or about 21 degrees. Here is what a 21° slope would look like.



The red dimensions here show the distance from the sensor to the surface of an equal volume of propane respectively, rounded to the nearest one-sixteenth of an inch. If the slope is on the side-to-side axis, the top (originally 9-inch) level reports 3/16" higher while the middle (originally 3-inch) reports

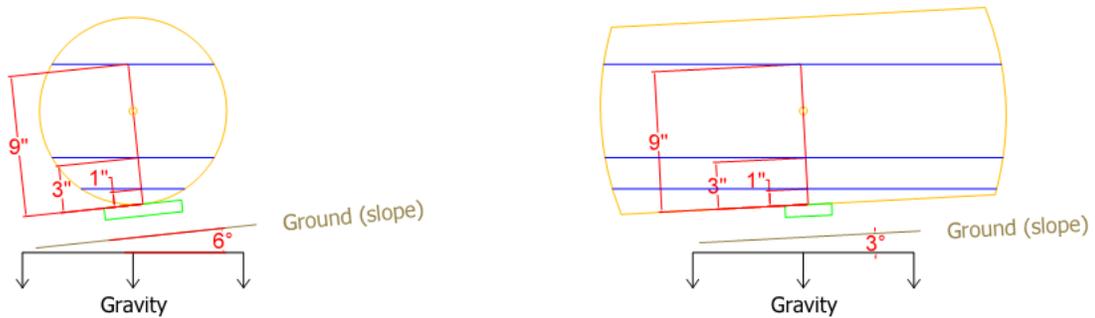
3/16" lower and the bottom (originally 1-inch) level reports 3/8" lower. The readings on the rear-to-front axis are more exaggerated, but not grossly so except for the bottom, which doesn't read at all.

To find a more relatable slope, the steepest bus route in San Francisco is 23.1% or about 13 degrees.



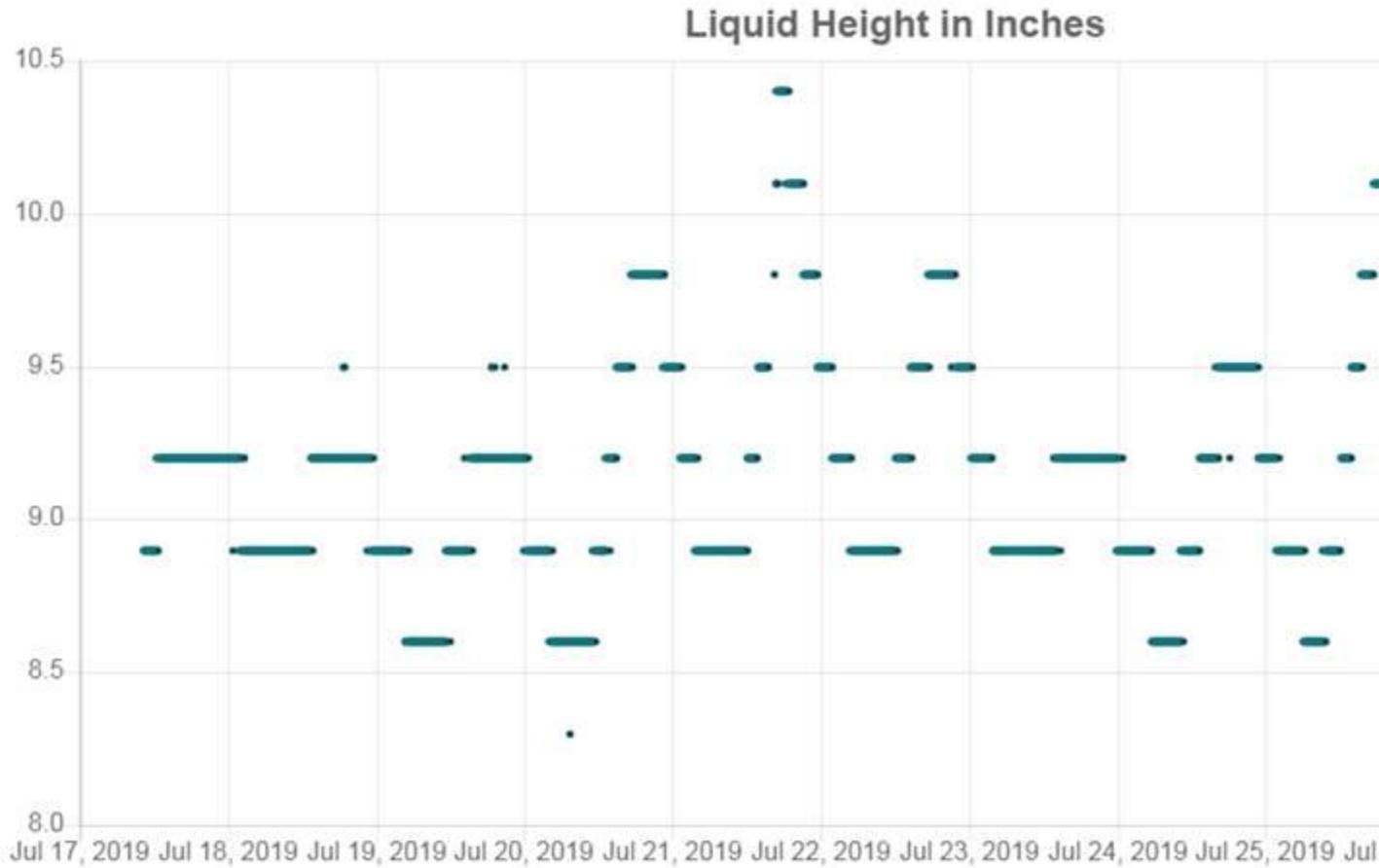
Here, in most cases the levels are 1/16" off or less, except for the bottom levels. There the difference is still only 1/8" side-to-side or 9/16" front-to-back.

Finally, I used the slopes recommended as maximums by the manufacturer of my absorption refrigerator, 3 degrees side-to-side or 6 degrees front-to-back. (Note that those slopes are for the refrigerator itself and the refrigerator faces toward the passenger side, so the slopes shown below are reversed.)



At more real-world slopes, the differences (rounded to 1/16") are negligible.

I get that a diagonal slope rather than in just one of two axes could magnify the difference, but I don't think it would be worth trying to do the math. The accuracy of the sensor comes into play here. Below is a reading from my XL sensor for a 10-day period.



During these 10 days, the motorhome was parked, and no propane was used. This points out an aspect of the RV Whisper that is very useful. If I had just used the Mopeka app a few times around the 22<sup>nd</sup>, I might be frustrated – is it almost 10.5” or less than 9”? Looking at the history I can say that it’s about 9”, look for trends, etc. More precision would be better, but I think I can live with the variation.