

# *Are You Going Backward or Forward?*

LESSON BY LUKE REYNOLDS (May 23, 2012)

Have you ever heard the phrase one step forward and two steps back? Or maybe you've heard it said two steps forward and one step back? Well, I wanted to share a thought with you.....Did you know that on TV or in the movies, all wheels on cars and bicycles appear to go backward?

The reason wheels seem to spin backwards on a camera is because when you film something, you are really taking a series of still images and then replaying them so fast that the eye is fooled into thinking it is a continuous stream of images. The eye can see about 12-14 frames per second. Because of a physical law called the Nyquist Sampling Theorem you need to display frames twice as fast as the eye can see to fool it into seeing it as a continuous movie. If you want to do some researching on the internet you will see that Nyquist showed mathematically why that is true. But I'm not qualified to give you that information!

Now, imagine you have a wheel that is spinning exactly once every second. If you took a picture at the same rate, it would look like it is standing still. That's because it rotates exactly once every time you take a picture. Now take a picture just a little bit faster than 1 per second. Now every time you take a picture, the wheel has not quite made it all the way around; maybe it will have gone 350 degrees around, so it's 10 degrees behind the first frame. The next frame it will have gone another 350 degrees, making it now 20 degrees behind the first frame, and so on. When you play the film back, it will look like the wheel is moving backwards, even though you know it was going forwards. The opposite effect happens when you take pictures a bit slower than the rotation rate. It gets more complicated when the wheel does not rotate at a constant rate, like when a car accelerates.

The next time you watch TV or go to the movies, watch the wheels as a car speeds up. You might see the wheel appear to go backwards, then stop, then go forwards, all while the car is moving forwards.

I pointed these things out because when we live our Christian life we have to keep moving forward, even if the world seems to be moving ahead in a backward motion. Nevermind how things appear to those around you. Just keep on keeping on. (READ - **Colossians 3:12-17**)

Have you put on Christ? Are you living for Him? It's not too late to make a change to do what's right! Take some steps forward as we stand and sing....