

LEAN OR DIE!

Quite a drastic statement you say? Well that is the answer to the question of what happens when you take a curve “too hot” and you suddenly think you can’t make that curve.

Many of us have heard of or even experienced taking a curve too fast and maybe panicked a little bit causing us to slow down real fast or perhaps too fast and almost crashing because of it.

Thus we need to understand what a bike turns when it is leaned, and that it will lean a lot more than we think it can. A lot of us think it’s cool when you hear your floorboards or pegs scrape, but it is simply an indication that you are approaching the maximum lean angle of your bike. It will safely lean more than we think and as it leans more it turns sharper.

So, why does a bike turn when it leans you ask? Why doesn’t it just go straight down the road in a leaned over angle position? Well, let’s imagine a Styrofoam or plastic cup lying on its side. If you roll it, it tends to roll in a circle, or it turns when it rolls. The cup rolls in a circle because the mouth of the cup is larger than the base. The cup on its side can represent the left or right half of a motorcycle tire. Now, imagine that two cups are joined together at their mouths. If the two joined together cups are lying on their sides balanced on the spot where the mouths are together, this would represent the motorcycle tire with the bike balanced upright. If we lean the joined together cups to the right, they will roll right because as in the example above, the middle is larger than the base or edge. If we leaned to the left, the cups would roll to the left.

Our motorcycle tires are much like the two cups joined together at the mouths except for one big difference. The turning radius of the cups is static because the base is a fixed ratio of the mouth of the cup. The difference in how the tire reacts as compared to the cups is that we have the capability of leaning the bike in varying degrees and getting more or less turn out of it. The edge of the tire continues to get smaller in relation to the middle of the tire, enabling us to lean the bike more and turn it more as we need to. In the case of the tire, this is sometimes referred to as “coning”. In a lean, the inside of the tire contact area covers less distance than the outside (the middle of the tire) and causes the tire and bike to turn.

Since the outside ring of the tire gets continually smaller in relation to the middle of the tire as we lean the bike, we have the advantage of being able to lean the bike more to get more turn up to the limits of available traction. This is where we need to use some judgment based on the road conditions. Is the road wet or is there some gravel or some other foreign substance on the road? These things all determine the amount of lean and turn we can get away with in a curve. We can usually safely get away with more lean than we think. A lot of accidents in curves happen because we fail to take advantage of the maximum or more extreme lean angles of the bike. In effect, we “chicken out” or give up before we have reached the full turning capability of the bike.

Getting more comfortable with leaning the bike comes with riding experience and practice. Often, we are not comfortable leaning the bike to extreme angles because we have that feeling that the bike may slip out from under us. On dry clear pavement we have much more traction available than we think. One good way to get the feel for the traction available is to try the “push the boot” test. If you have motorcycle boots that have a true rubber sole, place your foot out in front of you on the pavement and try to push your boot forward. If the pavement is dry, you will not be able to push your foot on the pavement. This represents your motorcycle tire against the pavement, except the motorcycle outweighs you by several hundred pounds and the rubber in the tire has a lot more traction built into it than your boot does. If it is hard to move your boot on the pavement, it gives you some idea as to what it would take to have your bike slip out from under you.

If you have been hesitant to lean the bike very much, practice or take an advanced rider class to enhance your ability to lean the bike and to increase your comfort zone. That way, if that “lean or die” opportunity should come along, you will be prepared and will be able to put that curve behind you and enjoy the ride.

Now, let's ride safe and see what's over the next hill or around that next curve.

**Tex,
VFWR Safety Officer**