Are Alignments on Trucks and Buses a GREEN procedure or a Money Drain (Part 9)

We have explored what I find to be the main issues for alignment on Trucks and Buses and looked at Feathered wear which I consider to be the main tire wear result of mis-alignment. Next we'll explore the other tire wear pattern on commercial truck and bus tires, cupping.

This pattern can manifest in an isolated section of the tire, around 1/3 third of the circumference or all the way around the tire. It can appear on one shoulder or both, or alternate shoulders around the tire. It can appear in the center rib or the 2nd rib. All of these visual clues are helpful in identifying the source of the problem. The pattern of cupping changes between tread designs and casing structure. For example, a steer tire will not show the same cupping as a drive tire for the same principal mechanical cause. In the same way a Low Rolling Resistance tire cups from issues that did not cause cupping in the old Standard tires.

As engineers change tire construction, compounds and tread designs, suspension designs, brake performance and engine horsepower the tire changes how it reflects the input of force into its footprint. This means that the alignment tech and maintenance Managers must be open to new evaluations of the performance characteristics the tire. Nothing remains the same in this area of the industry so we must remain open to new ideas and solutions.

There are seven significant causes for cupping in commercial truck and bus tires.
1. Inflation
2. Lack of Balance
3. Mis-Mount
4. Bent rims
5. Feathering
6. Loose Components
7. Tall tire / Short Tire.

Over the next few post I will explore each of these in a relatively brief manner focusing on the main issues I find in the field today.

I will start next with Inflation and it might be helpful if you had a tire manual from your favorite brand of tire on hand as a reference. Make sure it has the Load and Inflation tables in it.

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