

MD Alignment

Are Alignments on Trucks and Buses a GREEN procedure or a Money Drain (Part 5)

Camber or Caster or a combination of the two seem to be one of the most popular settings for alignment technicians. To be clear, Camber is the inward or outward tilt of the tires relative to vertical and Caster is the forward or rear ward tilt of the king pin relative to the same. Camber is built into the axle and caster is accomplished by elevating the mounts for the front or rear of the leaf springs combined with tapered wedges between the springs and the axle. Since the axle is built with little or no difference in caster from one side to the other (no more than .5 degrees) and is intended to remain that way, use of wedges on one spring stack and not the other, or wedges place in opposition to one another is not a recommended practice.

Many alignment techs use Caster and Camber to try and control the tendency of the vehicle to pull in one direction or the other. In fact all manufacturers of axles used in North America that I am aware of: *“Expressly prohibits bending of axle beams (hot or cold) to change camber or for any other purpose.”* This quote is from the Dana Service Manual and similar statements can be found in all other axle manufacturer’s manuals. This is one of the reasons that I do not spend time on these settings. The other reason is that the steer axle is not the dominate axle under the vehicle.

Consider this: In the US, a standard highway tractor will have one steer axle and two drive axles. The steer axle will carry a normal load of about 12,000 lbs and have NO horsepower in it. The drive axles will carry almost three times as much weight, 34,000 lbs and have all the horsepower. This means that the use of Caster and Camber to control the direction of the vehicle require the lightest axle with the least amount of horsepower to counter the heavier and more powerful axle. The obvious result is premature and irregular wear on the steer axle tires.

I find it is much more effective to use the alignment of the drive axles to control direction and thereby extend steer tire life. In the next installment I will discuss my view of drive axle alignments and their effects.

As a final point on Camber: When the TMC Task Force was investigating alignment issues, they followed up on 1,000 camber complaints and on inspection found that none of them, that’s ZERO, NADA, ZILTCH, were actually camber tire wear problems. My experience in the field has had similar experience. The difficulty is

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that many techs do not know how to identify tire patterns. They just go by “SPECS” and try to make them right and hope the tire will perform properly.

Michael L Beckett
President